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Telephony.

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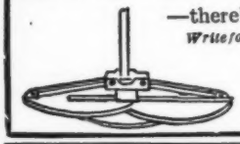

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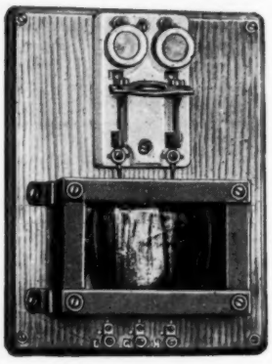

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Telephony.

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By the Way—

The matter of hotel telephone service is being investigated in Massachusetts.

It appears that some of the Boston hotels have purchased the telephone booths installed by the New England company and are charging 10 cents a call where the published rate of the telephone company is but five cents.

The hotels contend they are not in the telephone business and are not subject to the jurisdiction of the Massachusetts commission. This is a case that will be watched with interest by the telephone companies of every state.

Commissions' Ideas of Service.

At the annual meeting of the Association of Railway Commissioners last fall the committee on service of public utility companies presented a report, portions of which are of interest to telephone companies as indicating the trend of thought of public utility commissions.

"In many of the states," says the committee, "the laws definitely state that utilities must not provide or maintain any service which is unsafe, improper or inadequate. While practically all public utility laws either authorize or require the commission to establish and enforce adequate and reasonable standards of service and to otherwise require that the service furnished will be satisfactory, sufficient attention does not seem to have been given to this phase of public utility regulation."

Following these sentences is a criticism that "a large number of state commissions appear to have expended the greater portion of their time and effort in making valuations and rate adjustments without giving any particular attention to the quality of service being rendered or to the effect of the rates ordered on the quality of service that can be rendered with the revenue obtained thereby."

Before taking up the service of specific utilities, the committtee voices its opinion that "poor service at low rates is not desirable from any standpoint, when reasonably good service can be provided under rates that are not excessive."

"Good service," observed the committee, "has to do with the entire operation of the utility, the conduct of the utility's business and all of its relations with its consumers."

While these are general observations on the service of public utilities, they apply quite directly to telephone service.

The increasing importance of the telephone in commercial and social life is creating a demand for better service everywhere. No longer is the farmer content with the poor service furnished by the co-operative line—he desires the better service he has found is given in the nearby town. The town people, on the other hand, want a higher grade of service, the kind they know is supplied to the inhabitants of the county seat. And so it goes—an improved service being desired by the various peoples as their standards of living or their ideals are raised by the changing conditions of the period in which we live.

In discussing the conditions essential for insuring good telephone service, the report of the committee states that the plant and equipment of all kinds and character must be up to date and standard in every respect, properly and intelligently maintained, of the kind and type required, and satisfactory for the work it must perform.

Operators should have received preliminary training in traffic work, must conscientiously perform their duties, and all classes of employes should be governed and controlled by such rules and regulations as are in harmony with good business methods.

"Such plant and such equipment and such efforts undertaken under these conditions," says the committee, "will produce good telephone service for the reason that the rules and regulations, plant and equipment, and the intelligence and ability of the operators and other representatives of the telephone utility will be in harmony with the requirements of the various localities."

"It should not be expected that telephone service will ever be ideal or perfect. Such service will be impossible so long as the frailties of the human being exist or mechanical devices wear out, or become defective, or improvements in the art are being made."

The committee concludes that if a company builds its plant according to accepted standards, uses apparatus and equipment standard in design and material, it has done all that either the public or the commissions may reasonably ask.

What About Your Plant Values?

Can You Take the Book Value of Your Plant and Show It in Detail?—This Article Outlines a Simple System for Giving This Result Without Affecting Your Present Bookkeeping System—Importance of Knowing Plant Values

By E. C. Constans

There are few of us who should not have an increase in our rates. We know this—know that we are not making what a man in another line of business is making—yet for some reason we hesitate to take steps to get what is coming to us. The reason in most cases for this hesitation, is simply the fact that we are sort of scared out, afraid that we can not submit enough data to support our contentions before the state utility commission.

That is the only reason I can think of, for we have all been educated along fighting lines. It can not be the prospects of a scrap that scares us, so it must be that old bugbear—data covering cost of giving service.

Cost Data a Bugbear in Rate Case.

It is just that end of the business that appeals to me. I like to know what my service is costing me, so I am generally trying to figure out methods to give me good cost data, while my neighbor is investigating the latest plant equipment. Both of us are working along different lines and the result is that while we are highly educated along the line we specialize in, we are very ignorant about the other side of the business.

This condition is all right when our organization is big enough to include specialists, but the trouble is that the majority of us have not a large enough organization. For years past the plant has been the idea, so the notion was fastened upon us that the plant was the big thing and that the office end of the business was something which we could delegate to anybody who could post debits and credits.

And now that our office methods are just as important, if not more so, than plant methods, we never spend the time on them that we did on our plant. While we can explain and give details regarding any part of our equipment, when it comes to explaining and giving details about our books we find that we are up against it.

Trouble in Backing Up Plant Value.

In following rate cases of different companies very closely, the fact that stands out and hits one between the eyes is the trouble most of the companies have in backing up their value invested in plant. They get up their balance sheet all right, and also can make up their profit and loss statement, but when the commission asks for details of their investment accounts, they are up against it.

This being the case, we want to keep our plant records in such shape that we can, if necessary, list everything that composes our plant, for the plant is our backbone. We must show a fair plant value before we can determine what is coming to us. That's the thing that we must get next to—the fact that we have to be in a position to show what so many dollars of plant we show on our books really consist of, to show that it covers actual material, labor and expense properly chargeable to plant, and not theoretical charges.

THEORY, POLICY, FACT.

"To convert theory into policy, and policy into fact, has ever been the task of men who, able to look beneath the surface of things and beyond the present hour, can see the absolute necessity of getting out of the ruts, that custom gets us all into sooner or later, and raising business to a higher plane—to the high road of prosperity."

We have not kept our records in this shape in the past, so the thing we must do now, whether we have a rate or not, is to take an inventory. Some companies make this themselves, while others employ competent engineers. But at any rate an inventory is the order of the day, because until you know what your plant is actually worth—and the majority of book accounts do everything else but tell you this—you will never know just what you should earn.

Have Engineer Inventory Plant.

It has always been my contention that unless a company has an engineer in its employ, it is costly to try and take its own inventory. Money may be saved at the time, but I find we do not include enough expense that went into the plant. By that is meant board and room for men while building a country line and items of a like nature.

We have a tendency to inventory the stuff we can lay our hands on and forget those other items that are just as much in the plant as a pole. The result is that the absence of this overhead makes the plant values too low, and that means that the earnings are cut down by every bit left out. Therefore, I think it is cheaper to have an engineer make the inventory, unless there are plant data of recent date that will allow you to get a good working basis of your overhead.

The overhead properly chargeable direct to plant was brought to my attention very forcibly a short time ago in going over some cost figures covering a country line. The total cost of the line was $5,000, yet the actual labor and material was only $3,800. The difference, $1,200, or 24 per cent of the entire cost, covered superintendence, percentage of general office expense, tool expense, interest during construction, team, motor truck, railroad fare, board and room.

This was all chargeable to plant, for the line could not have been built without these expense items. The line extended out a long way and it was necessary to furnish the men with their noon meal every day, as it was cheaper than hauling them back and forth. A team had to be on the job, likewise a motor truck, and naturally a man to superintend the work. Yet how many of us would include this 24 per cent if we were to take an inventory, say, five or ten years after the original work had been completed. Certainly I would not load my physical property as heavily as that, for it would look out of reason. Yet that loading would give the true value of that particular line. If I inventoried the line, my figures would be away below its actual cost, and as a result I would not get the rates I was entitled to, because my plant figures would be too low.

A competent engineer will give us figures that come nearer representing the true value of the plant, but his figures, at best, are average or blanket figures and therefore have the disadvantage that an average method always has. Hence, the conclusion we have to come to is just this:

Securing Plant Record Data.

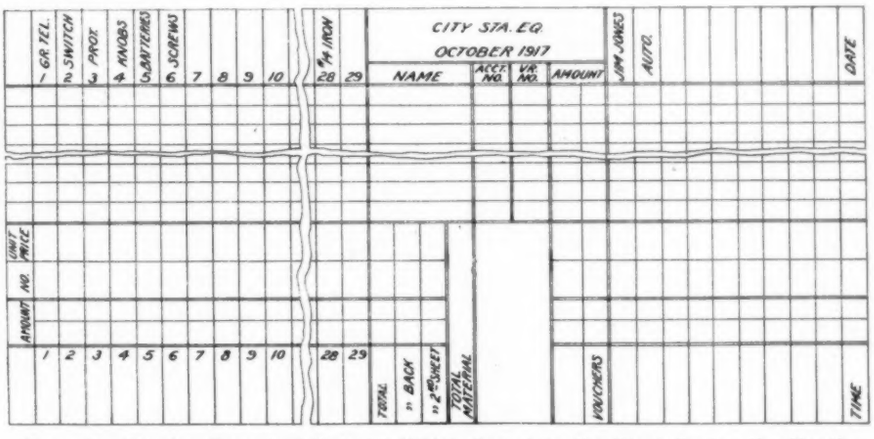
While a competent engineer will give much better figures than one can work up himself, in every instance, of course assuming that the plant records are incomplete, the fact remains that the only true plant value that you can prove in on, is value that you can back up with actual plant records, made up at the time the work was being done. To get this data I devised the following system, which is not a fine-spun theory, but one that I have had in use for some time.

The first step was to find out how

many different kinds of material entered into an average plant. Upon checking this very carefully, it was found that 195 items would cover practically everything that is used in a plant serving 2,000 subscribers. This seems, at first glance, to be rather a low estimate, but it is an actual count from a perpetual material and supplies inventory, using one year as a basis.

As we only have 195 items, and only about 25 of these real active, it was an easy matter to make up a form, which measures 9 inches by 12 inches. These measurements include binding margin, as the form is made up on loose-leaf sheets.

The accompanying illustration shows the front of the form and it will be noted that this side carries 29 material columns. These columns are used for the most active accounts, such as telephones, protectors, ground rods, switches, screws, batteries, wire, etc. The next space following the 29 material columns is used to note details regarding the work, such as the subscriber's name, in case of a station being installed, etc. This is followed by a column providing for the entering of the subscriber's ledger account number—I find it a good plan to have the ledger clerk insert account numbers after each installation at the end of the month. This provides an additional check that the work order has been entered in the subscriber's ledger, and assures that the subscriber is being charged for service.



Form for Keeping Record of Material Which Goes Into the Plant During the Month.

The next two columns show the voucher number and amount. These are provided to take care of and show in detail, supported by the actual voucher, the miscellaneous expense. For instance, in installing a country telephone, it is often necessary for the installer to get dinner on the job. This is properly chargeable to plant and therefore is entered on the sheet. This leaves 11 columns on the sheet, the first ten being used to report the time, and the last one the date.

The entire back of the sheet is ruled for material, the columns being numbered from 30 to 85. The second sheet is ruled in a like manner, carrying columns numbered from 86 to 197. The two sheets making up the form thus provide 197 material columns, one column for details, one column for account numbers, one column for voucher numbers, one column for amount of voucher, 10 columns for time, and one date column. This sounds rather complicated when it is written out, but look at the sketch again! You will note that the form is very simple. At the bottom of the form space is provided for the unit price of each material and time item, another space for the total of each column, and a space for the amount.

Now, if you'll just look over the form again and get familiar with it, we will take up its actual use in your office.

One set of sheets are used for each account and last one month. On the first of the month sheets are opened for station equipment, station removals, station changes, repairs to wire plant, repairs to equipment, and any other accounts that carry either time or material. These, of course, need only be opened when there is time or material to apply on them.

On the first day of the month, Lineman Jones installs a telephone for Bill Smith. That takes him two hours and the rest of the day he spends repairing the wire plant. At the end of the day he makes out his report something like this: "Installed Bill Smith, single line, Jonesboro, city. Time, 2 hours; auto, 2 hours. Material used: One grounded telephone, one No. 60 protector, 10 ft. duplex, one ground rod, one knob, 50 ft. No. 12 drop. Repaired No. 22 line Jonesboro, country. Time, 6 hours; auto, 6 hours. Material used, 100 ft. No. 12."

We take these time reports and enter the material and labor on our detailed Jonesboro city station equipment form like this:

Column one, we will say, covers grounded telephones; column two, duplex, etc. So we enter in column one, one, and in column two, ten, etc. Then under name, we write Bill Smith, and in the first time column, which we head "Jones," we post two hours. In the second time column, headed "auto," we post two hours, and in the date column we enter "10/1."

The same operations are performed with the wire-plant time and material, entering these on the detailed Jonesboro country repairs wire plant.

At the end of the month we will have 12 to 15 sets of forms filled out, and these will account for all of our lineman's time and every bit of material used during the month.

The following detail sheets will be opened up during an average month:

Jonesboro city station equipment, Jonesboro country station equipment.

Jonesboro city exchange lines, Jonesboro country exchange lines.

Jonesboro city removals, Jonesboro country removals.

Jonesboro city changes, Jonesboro country changes.

Jonesboro city repairs wire plant, Jonesboro country repairs wire plant.

Jonesboro city repairs equipment, Jonesboro county repairs equipment.

Jonesboro repairs C. O. equipment.

Jonesboro other maintenance.

We are now ready to close, and we will take Jonesboro city station equipment detailed sheet for our example. We add Jones' time column, which gives the total time he spent on "city station equipment." Multiply this by his rate per hour and we have the amount of Jones' time chargeable to city station equipment. We now add the "auto" column, multiply by the rate per hour determined by dividing the total auto expenses for the month by the number of hours it was in use, and we have the amount of auto chargeable to city station equipment. Adding these two amounts together, we obtain the total time represented in dollars and cents.

Next we take our vouchers and enter them—it saves time to enter them at the end of the month rather than daily. Then in the same column we show our percentage of general office and superintendence chargeable to city station equipment. Adding this column gives the expense properly chargeable to station equipment.

We are now ready for our material. Each column is totaled and the unit price inserted. By multiplying, we have the cost of each different material item. We add these material amounts on the first sheet and make a subtotal. Then the material totals are brought forward from the back of the first sheet and from the second sheet, and the addition of these subtotals gives the amount of material properly chargeable to "city station equipment."

We now have three totals—time, material and expense. By adding these three totals together, the amount properly chargeable to "city station equipment" for the month is obtained.

Thus is consolidated on one form everything that goes into our "city station equipment plant" account. We use the same columns every month for the same class of material; for instance, column one covers grounded telephones this month and column 180 covers cable boxes. Column one will never carry anything but grounded telephones, and column 180 will never carry anything but cable boxes, although there may be only the one entry in column 180 during the entire year.

By assigning one class of material to a certain column, at the end of the year we can make up a recapitulation in a very few minutes, showing just how many telephones we installed, how many ground rods, switches, protectors, knobs, wire, etc., and the actual material cost of each item. By adding the time totals, we obtain our labor cost for installing this material, while the 12 monthly expense totals give the indirect cost.

See what this gives us? If we were asked to give the details of $5,000 invested in station equipment for the year, we simply turn to our recapitulation of our station equipment detail sheets, and there we see everything at a glance that makes up this $5,000.

In connection with this form, I use a simple plant ledger. This ledger carries one page for each plant account. The first page is land; the second, buildings; the third, city station equipment, etc. It is in loose-leaf form and consists of six columns. The first is for the date; the second covers the cost new; the third covers dismantled plant; the fourth, depreciation; the fifth, the total of dismantled plant and depreciation; and the sixth, the difference between the second column and the fifth column, which gives the present value.

Postings are made monthly from the detailed plant form in total. For instance, if the city station equipment for the month of October shows $250 on the detailed plant form, this amount is posted in column two. Each ledger sheet shows the rate of depreciation, which is figured monthly and entered in column four. We then make our extension in column six, and have the present value.

It will be noted that the city and country are kept separate. This is very important, for it gives us the data that permits figuring our country business on an intelligent basis. These are just kept separate on the plant ledger. The general ledger, of course, carries station equipment in total, while the plant ledger carries two station equipment accounts—one country and one city. The total of the two accounts equals the station equipment account in the general ledger. This also applies to the depreciation.

By keeping these accounts separate, the investment per country station can easily be figured. When you have it, just take 14 per cent of it—7 per cent for interest and 7 per cent for depreciation—and see what you have left of a $12 grounded rate, or an $18 metallic rate, for maintenance, operating, general expense, etc.

It will be a sad tale that these figures will unfold, but if we could all just read this tale and have it backed up by figures of our own making, such as have been outlined, what a jump this business of ours would take. Of course, we are all going to read it in time, but we want to make that time as short as possible.

It is up to you and me to do everything we can to make the other fellow realize just what his country business means, for until we all get together and get our shoulders to the wheel, we can never hope to get a fair country rate. So let's talk this country business over. You, who have cost figures, feature them at conventions, stir up a row and get some action. That's what we want—action—a chance to show the other fellow what a losing proposition his country business really is. While we are on the subject of losses, we can also include tolls. Yes, that's a fact!

WHICH?

"The bookkeeper who feels his job is a certainty, the clerk who regards his company as a perpetual meal ticket, the local manager who gets gout in the head, is sure to sink into dullness; and then something happens.

"A man is always either bigger or smaller than his job. If he is bigger, he is on the way up. If he is smaller, he is on the way out."

The system which I designed and use has been explained, and now to take up its relations with an inventory of your plant. First, we will consider that you have not made an inventory as yet.

The time is coming very shortly when you will have to make an inventory. If you keep a plant record such as outlined, for one year before taking the inventory, it will provide you valuable data—data that will make it easy for you to take your own inventory with the knowledge that your unit prices include enough loading.

On the other hand, if you have an engineer make up your inventory, this record will be a big help to him. Naturally the more data you can furnish him, the better his unit figures will be. He can base his figures on actual data made up by you, and this will eliminate, to a great extent, the wrangles that often develop between the commission engineers and your engineer on the loading.

If you have made an inventory yourself, you have a big investment in time and effort, and in money if you had an engineer make it. In order to protect this investment, you have to keep your inventory up to date and this form described does just that.

Another thing that makes the introduction of a record of this kind very important, especially so at this time, is Valuation Order No. 3, Revised, issued by the Interstate Commerce Commission. This has not hit us as yet, but it will very shortly. Then it will be compulsory for us to keep our plant records in such shape that we can give details of every dollar we add to our plant accounts.

With these two forms, I believe I have solved the plant accounting problem, and I want to pass them along. I have tried to make it clear just how the form is handled in my office. If any of the high spots have been missed or points are not clear write to TELEPHONY and I'll be mighty glad to explain it further.

Do not think that this is a complicated or costly form and one that you can not use in your office. It is simple and does not take any more time to keep up than the old haphazard way of keeping time and material.

In my case, handling five exchanges and making city and country divisions, I only use 500 detail sets per year and 50 plant ledger sheets. The forms, therefore, do not cost much. I had 500 of the detail sets (two sheets) and 50 plant ledger sheets printed on excellent ledger stock, loose-leaf form, and a binder made that takes both forms, and the cost was $20 for the whole outfit. As it saved 20 times this amount in a single rate case, I decided it was one of these investments you read about, only in this case it actually happened to me.

Lathrop (Mo.) Telephone Exchange Changes Owners.

F. F. Lawrence, of Junction City, Kan., and A. J. Roberts, of Kansas City, Mo., recently purchased of D. G. Gray the Cloverleaf Telephone Co., at Lathrop, Mo., consisting of more than 500 stations.

Mr. Lawrence, who has been connected with the Junction City (Kan.) Telephone Co. in the capacity of general superintendent of plant for the past 14 years, assumed charge of the Lathrop plant January 1. With a man of his experience in charge, the subscribers of the Cloverleaf Telephone Co. may expect to receive improved service.

Exchange Destroyed by Fire.

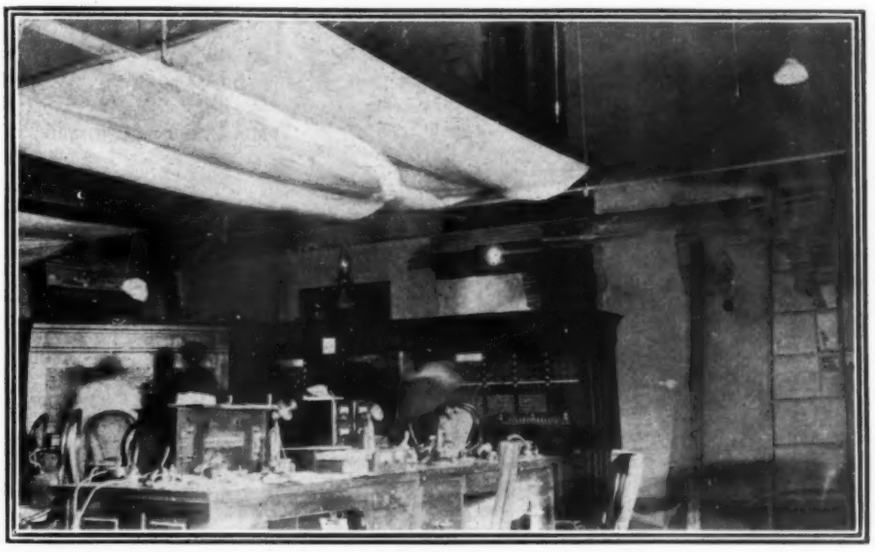
The entire central office equipment of the Murphysboro Telephone Co., at Carbondale, Ill., including a five-position switchboard, was destroyed by fire December 25. About two hours after the fire was checked, a temporary toll board was installed and in operation.

The Explosion in Halifax Harbor

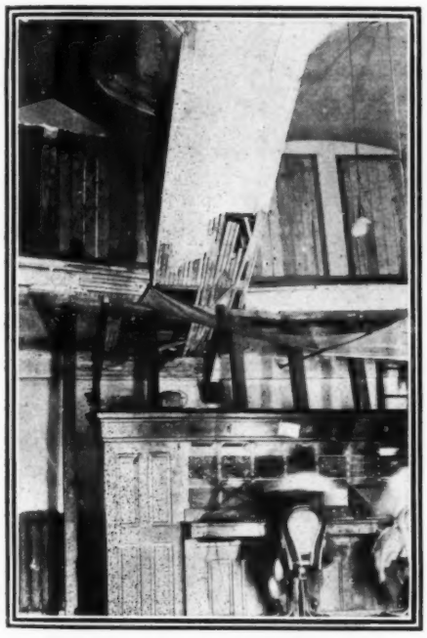
Damage to Plant of Maritime Telephone & Telegraph Co. Caused by Explosion in Halifax Harbor Estimated at $200,000.00 — Lorne Central Office Wrecked — Long Distance Line and Submarine Cables Destroyed

The explosion in Halifax harbor on December 6 of the munition ship, "Mont Blanc," which caused so much loss of life and destruction of property in Halifax, did great damage to the plant of the Maritime Telegraph & Telephone Co.

It literally blew to pieces one and one-half miles of long distance line, comprising ten No. 12 copper wire circuits.



End of Local Switchboard in Lorne Exchange Showing Damage Caused by Explosion.



West End of Lorne Switchboard.

Aerial cable and pole lines in other parts of the city were badly damaged, and about 400 sub-station instruments destroyed.

The glass windows in the central offices in Halifax and Dartmouth and in the new Sackville office, which had not then been cut into service, were, generally speaking, shattered.

The building which houses the company's Lorne central office, and which is situated nearer than the other office buildings to the point at which the explosion occurred, was wrecked, its back being broken, its north wall blown in and an ell section forcibly detached from the main building.

The submarine cables connecting the St. Paul and Harbor offices, which are on opposite banks of Halifax harbor, were damaged beyond repair.

The company considers itself wonderfully fortunate, under the circumstances, that none of its central office buildings were actually demolished and that none of its central office equipment was put out of business.

Plans had been prepared for a new long distance pole line to be substituted for that destroyed, and to be built by another route. The submarine cable facilities between the St. Paul and Harbor offices were to have been augmented shortly by the laying of an additional cable, and, as the cable was in stock and was quickly laid, the service suffered the minimum of interruption.

The main part of the loss was the wrecked Lorne office building. It will be necessary to erect a new building and to install new central office equipment. The company's losses incident to the disaster are estimated at about $200,000.

To the Left Is Wrecked Toll Line.

Broken Pole on Long Distance Toll Line—Wrecked Toll Line at Richmond, Formerly a Thickly Populated District.

A large number of the employes received cuts and bruises, some of them of a serious nature, and many had narrow escapes from injury. Two of the company's operators lost their lives in the fire that followed the explosion. They were not on duty at the time.

The "Why" of a Telephone in Elevator of High Tower.

Installation of telephones in elevators is not uncommon in the many-storied office buildings in our large cities. But a telephone in an elevator in the campanile—a tall, white shaft of granite some 300 feet in height—at the University of California is rather unusual.

The Journal of Electricity states that it was necessary to provide telephone communication between the caretaker of the campanile and the university offices. The shaft is provided with elevator service, a trip being made every 15 minutes. The elevator stops a few minutes at the top, descends, picks up passengers and rises again.

As there are students or visitors usually waiting to make the trip, the elevator is almost constantly in motion. The telephone, therefore, could not be placed at either the top or the bottom of the shaft as there would be no one there to answer it. So it was decided to install it in the elevator.

Elevator passengers are rather startled to hear the telephone ring and a conversation carried on while the elevator is in motion. The connection, however, is simple enough, a long cord with sufficient slack to allow for the car's motion being all that was necessary.

Hotel Telephone Pay Station Rates

Hearing Before Massachusetts Commission on the Right of the New England Telephone & Telegraph Co. to Sell Its Service in Bulk to Hotels in Boston to be Retailed at a Price Other Than That Prescribed by the Commission

An important investigation bearing upon the contract relations between the New England Telephone & Telegraph Co. and various hotels for the furnishing of public pay station service was conducted by the Massachlusetts Public Service Commission recently at Boston, a full day being devoted to the hearing of evidence and arguments.

A question of fundamental importance in this matter is the right of the commission to regulate the sale of telephone service by hotels connected with outside exchange systems. The wages of hotel employes engaged in furnishing telephone service were also brought into the discussion and, despite the protests of counsel, were conceded to be germane to the issue at stake by Chairman MacLeod of the commission.

Opening the hearing, Chairman MacLeod said that it has come to the notice of the board that the Parker House and several other hotels were taking over the private branch exchanges which have heretofore been operated by the telephone company with its own personnel and equipment. Under the new arrangement, the operation of the service at these places will be similiar to that at the Hotel Copley Plaza, where the company has its own switchboard and all calls to and from that switchboard from prepayment booths and other stations throughout the hotel, are charged double rate for all local exchange service. The question of the propriety of this arrangement is the issue before the commission.

C. G. McDavitt, counsel for the New England company, said that prior to the filing of the company's schedule with the commission in July, 1915, there was available for hotels within the Boston metropolitan district private branch exchange contracts for hotel service which carried with them the provision that the company would furnish a switchboard, trunk lines, interior wiring without charge and make a yearly charge of $6 per P. B. X. station for a minimum of 50 stations. On all the business from that private branch exchange switchboard, there was allowed the hotel a commission of 15 per cent. The P. B. X. board was located wherever the hotel desired it, and the stations were located in the rooms, the kitchens, at the manager's desk, or wherever the hotel people desired.

In addition to the regular hotel system, the company has in operation in the corridors, stations not at all connected with the hotel switchboard but directly connected with the New England company's central offices. In some cases the amount of business was so great as to require a representative of the New England company. If a guest at the hotel wanted to talk with a guest in a room in the same building, it sometimes occurs that the call is passed from the booth in the corridor to the New England company's central office and thence back to the hotel switchboard to the room. Space was leased in the corridors of hotels where a company attendant was located and where there were merely the coin box instruments, a commission was paid in lieu of any rental charge. Space leased was generally paid for on a trade basis, no standard rate being in hand.

The present schedule for hotel service is the same as that applying to any lawyer's office or mercantile concern. There is a charge for switchboard of $24, for trunk lines, $24 each; operator's or answering sets, $6; stations, $6; and a charge for messages on the minimum of 4,000 yearly calls, which is $120. If the P. B. X. service merely covers the central district or any of the suburban districts, the charge for a so-called No. 1 system is, for the switchboard, including the operator's set and a minimum of 3,000 messages and two trunk lines, $144, and for each station $6.

In the case of metropolitan service, additional messages in excess of the minimum used within the contract year are 3 cents each. In the central suburban district the charge for excess messages is based upon the following schedule: For the first 3,000 calls, making a total use not exceeding 6,000, three cents each, business service. For the next 6,000 calls, including the minimum, making a total use of 12,000 messages, 2¾ cents each; and in excess of a total use, including the minimum of 12,000, 2½ cents each. These P. B. X. rates are available not only to hotels, but to any subscriber desiring the service.

When the hotels were approached with regard to taking over service on the present basis, the managements of the hostelries informed the New England company that when they made the change they desired to control all the service in the hotel. They preferred that the telephone company cease to be a lessee of space within the hotels; in some cases the hotels located stations where the telephone company formerly maintained stations.

Nearly all the hotels have now changed over to the standard form of contract. The leases were terminable. What the hotels charge from their booths is no part of the contract between the telephone company and the hotel, Mr. McDavitt stated. As a practical matter, it works out that the guest is charged 10 cents each, for example, for calls from stations from which he would have to pay but five cents under previous conditions. It appeared that the hotel had the right to charge any price it desired for calls outside from its rooms.

Mr. McDavitt said the company was, and is today, as a matter of fact, ready to go on with an arrangement under which it leased space from the hotels and charged the standard rate for service. Care is taken to remove public station

signs from stations which the telephone company does not control.

George R. Grant, for the New England company, said that so far as the telephone company is concerned, a private individual, business concern, manufacturer or hotel receiving service under a P. B. X. contract can make such charge for service as it sees fit. "We are serving the public under our regularly filed and published tariffs according to law, and the people who take the service are our subscribers," said the speaker.

There has been some fear in some quarters that such a situation as this might result in an intolerable condition through the re-selling of telephone service by a person owing no responsibility to the state, but Mr. Grant held that section 2 of the act creating the public service commission places all such persons under the jurisdiction of the board as common carriers. As soon as the commission finds that any firm or institution is selling service to the public, so soon does it become subject to the regulation of the commission under that law. But it must first be found as a fact that the service is being sold to the public.

Mr. Grant said that he was not before the board to say anything either for or against the 5-cent or the 10-cent charge for service from a hotel, but it is possible that the re-sale of service by hotels may lead to the necessity for commission regulation. John F. Sullivan, for the hotel interests, at this point said that the hotel men asked for the removal of the booths on the ground that they were losing money under the old arrangement.

Mr. Grant then offered a map to show that the New England company has within 500 feet of every hotel in Boston, an abundant number of pay stations to which anyone can go and talk at the regular rate, including guests. He did not think it within the law to compel a company to embody in its contract that the service shall not be resold at rates in excess of the established charges, unless the commission finds as a fact that the hotels are rendering service to the public and that the company is selling its service jointly with the hotel. Mr. Grant said that in his opinion the North Station in Boston is a public place within the meaning of the law so far as regards the portion of the building in the immediate vicinity of the public telephone booths.

Hotel Men's Position.

For the Hotel Proprietors' Association of Boston, Mr. Sullivan said that the real object of keeping telephone booths in the corridors of the hotels is the convenience of the guests; that the service given to the guests under the former conditions was becoming inadequate; that the guests were incommoded, frequently embarrassed, and that the general public came in and used the telephones to a far greater extent than did the hotel patrons. Guests frequently had to stand in line waiting for their turn before they were permitted to use the telephone. The situation had become so bad that a change was demanded.

The service rendered by the hotels under the old arrangement, Mr. Sullivan said, was unprofitable to the hotels; they suffered an actual loss, and that while the loss has been reduced, there is still a loss to the hotels in doing this business, even at the 10-cent rate. The position of the hotel men is that if they had to choose between suffering a loss by furnishing the maximum of accommodation to their guests and making a large profit while reducing the benefit to their guests, they would much prefer to stand the loss and give better accommodation, since a hotel exists for the purpose of pleasing its guests.

Mr. Sullivan in his opening said that with all due deference to the commission, it has no authority under the statute to make any order which would operate directly upon the hotel companies, since the latter are not rendering a public service within the meaning of the law. If that is true, the commission has no authority and ought not to attempt to exercise authority to compel the hotels to furnish service at a reduced rate, by indirection; that is, by requiring the telephone company to put a stipulation in its contract which would result in compelling the hotel men to reduce their rates. If what the hotels are furnishing is a proper service to their guests and not a public service, they then have a right to charge a rate which will give them compensation for the service rendered, and that they are not within the power of the commission to regulate.

"We will claim," said Mr. Sullivan, "that this commission has no power to direct a single hotel proprietor in Boston to put a telephone in his house; to put in a single telephone booth. Moreover, if every hotel in Boston desired to remove every telephone booth from its corridors, it could do so and there would be no power in this commission to prevent it from so doing. The service is a guest service and not a public service.

W. C. Pryor, of the Lenox and Brunswick hotels, Boston, was then called. He stated that primarily and principally, telephone service in hotels is for the benefit of the guests. By paying $6 per year per telephone, the guest has the convenience of telephoning from his room without being obliged to go to the office for that purpose. In the Lenox hotel there are 250 telephones in the house which involve an outlay of $1,500 a year for unnecessary telephone expense. In addition, the management provides three booths in the lobby of the hotel which originally were installed by the telephone company. When the hotel came to take over the telephone service on the new system, it was requested to buy the booths and now owns them.

The Lenox now furnishes the switchboard operator and pays her wages, but did not do so formerly. All the expenses of the telephone service within the building are borne by the hotel. Since going upon the 10-cent rate instead of the five-cent rate, it has been found that the guests are better accommodated; the hotel is now able to provide them with an interlocking system through the booths, and more operators, giving better service. In place of two operators as formerly, there are now three or four.

Results of Higher Charge.

The result has also been to keep out an element which the management did not care to have come into the lobbies to use the hotel pay stations. It is generally known that the public pay station across the street is used much more than when the hotel charged five cents. The chauffeurs at the door and newsboys go around the corner to the drug store and get their telephone service in that way instead of using the hotel switchboard facilities. The losses under six months' operation (December, 1916—May, 1917) under the old five-cent call system ranged from $159 to $266 per month; while from June, 1917, to December, 1917, under the 10-cent rate the monthly losses ranged from $223 to $4, being on the whole much less.

The guests were notified in writing that the charge from the rooms for local calls would be 10 cents instead of five. The 10-cent rate is in general service, the witness said, in first-class hotels in New York, Philadelphia and other large cities. Mr. Pryor said that he thought it inadvisable to put one or two employes on guard in the corridors to ask each person approaching the telephone if he were a guest. He knew of no way to exclude the public from competition with guests except by charging a higher rate, unless the inconvenience of taking public stations off the main floor were attempted.

The hotel receives no commission on its long-distance service. No concerted action has as yet been taken on the matter by the association. The calls from the rooms average probably two per day each. There are six public pay stations within 500 feet of Hotel Lenox. For the period between December, 1916, and May, 1917, the total income received from telephone service at the Lenox was $2,617, including all toll and local charges. The commissions on this under the old 15 per cent. plan were $390. From the rentals of the booths about $600 was received.

Linfield Damon, Hotel Thorndike, Boston, said that it was his desire that the telephone service of the guests should be

paramount, and that indiscriminate use of telephone facilities in the hotel by the general public had led to complaints by guests that they were unable to get proper telephone service. The witness expected that the losses sustained under the old system could probably be eliminated under the 10-cent charge. One reason for changing to the new system was to do away with the necessity for a guest's being obliged to drop a nickel into a pay station slot machine in the corridor in order to talk with his room from the street floor, the booths formerly being unconnected with the hotel branch exchange. The witness said he could not advance the prices of rooms to offset the minute charge like five cents for telephone calls, so a better service costing 10 cents is given.

Edward C. Fobb, Copley Plaza Hotel, one of the largest houses in the city, filed an analysis of the hotel telephone account. From November, 1915, to July, 1916, the losses totaled $1,765 under the old contract with the New England company whereby the latter furnished equipment and charged the hotel a flat rate of five cents per call. On July 1, 1916, the contract was changed so that the hotel rented all necessary equipment and paid for the calls on a sliding scale; that is, three cents for the first 3,000 and down to 2.5 cents per call. From then to February 1, 1917, the losses totaled $2,321. On the last date the hotel started to charge 10 cents for local calls at the telephone station on the lobby floor, and from then to December 1 the losses totaled $518. Thus, in these periods the average monthly losses were reduced from $220.75 per month to $51.87 per month.

Unless an extensive audit is made, the losses are rather higher than those quoted, and it costs at least $30 a month for the audit. The total loss by telephone operation from the time the Copley Plaza was opened in August, 1912, to December 1, 1917, is $14,726.40. Mr. Fogg said that many complaints had been received from guests about the interference of the general public with telephone service inside the hotel. The telephone rate from the rooms has always been 10 cents per local call. The telephone business of the Copley Plaza now amounts to about $2,500 per month and 16 operators are required to handle it.

J. D. Owen, auditor of the hotel, said that the telephone pay roll now averages about $900 a month. If outside service were not required, the hotel would install an automatic system at a cost estimated at about $6,000 for interior service.

Other hotel managers then offered cumulative testimony as to their losses under the old system and the inconvenience sustained by guests.

In his argument, Mr. Sullivan contended that the hotel does not furnish a public telephone service within the meaning of the statute. He admitted that the service is joint to the extent that it could not be carried on without the aid of the telephone company, but held that there is a privacy in the hotel which extends to the guests, even though such an establishment is commonly called a public house. That part of the service performed by the hotel is essentially a private service for the benefit of the guests. No invitation or inducement is held out to the general public to use the service. In two cases of hotel corridor telephone 10-cent rate complaints (Philadelphia, Boggs v. Bell Telephone Co., Penn. Public Service Commission, 2 Com. Tel. Cases 844; and Jacobs vs. Chesapeake & Potomac Telephone Co., Maryland Public Service Commission, 3 Com. Tel. Cases 519) it was held that the service rendered was for the guests and not a public service susceptible to commission regulation.

Lower Wages Paid Hotel Operators.

Just before the hearing closed, the Boston Telephone Operators' Union took a hand in the proceedings and it was testified that because of the taking over of the switchboards by the hotels and the leasing of them from the telephone company, a number of operators have been thrown out of work.

Julia S. O'Connor, for the union, said that these are women who have worked for the telephone company for a number of years and who are specialists as pay-station attendants. It is not easy for them to secure other work. By leaving the company and taking other work, they lose the seniority rights of long service. These young women have not been taken over by the hotels because the hotel managements are paying lower wages to their switchboard girls than usually apply in the service of the telephone company.

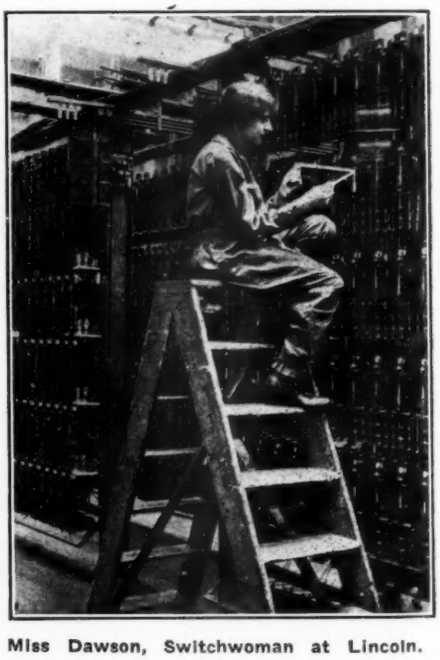
The result has been that these girls who are operators of long central office experience and of long experience on pay-station boards, are unwilling to work for the hotels at the lower wages, and the service rendered the public at these pay stations is not as good as though the experienced operators were employed. The witness said that thoroughly good pay-station service cannot be given by an operator without central office experience. It is insufficient to be able to manipulate the cords and just to manage the work at the board, unless the attendant knows the needs of the girl at the other end of the line, being familiar with central office conditions.

It is not in the public interest that in taking over the operation of these P. B. X. boards and increasing the rate to the public, the operating expenses have been reduced by hiring less competent help at lower wages. "So that at the time they were doubling the rate which they could exact from the public, they did not think it proper to pay something like a decent wage to their employes?" queried Chairman MacLeod. The witness assented.

Miss O'Connor said that there were 15 individual cases in the union of experienced operators employed by the telephone company for many years. These operators have been displaced by operators at substantially lower wages, and the assumption is that operators who will accept lower wages are less competent. These matters have been referred to the adjustment committee for settlement, and while the telephone company has expressed its willingness to take care of these operators, it has not found it possible to absorb them into its organization because they are pay-station specialists.

First "Switchwoman" in the Lincoln, Neb., Exchange.

Miss Florence Dawson, the first "switchwoman" in the Lincoln (Neb.) office of the Lincoln Telephone & Telegraph Co., started with the company as trouble operator, served her time at this and various other duties in the service



Miss Dawson, Switchwoman at Lincoln.

department and was later transferred to the switchroom as observation operator. On this position she had an opportunity to study the different types of switches and their operating features. All of this seemed to fascinate her and gave her the desire to try her hand at switchwork.

She was given a trial on an easy job that most anyone could do and as she progressed with her learning, she was given more difficult work. She is now doing most all routine inspection on all switches, and in some cases she does repair work. Miss Dawson is making good on the "man's" job and seems to enjoy her work.

"Telephony's" Home Study Course for Telephone Men

A Complete Presentation of the Principles Underlying Modern Telephony in All Its Branches—Arranged Systematically So That Regular Reading and Faithful Study Will Qualify Ambitious Men for Higher Positions—Prepared Under Supervision of Stanley R. Edwards—This Section Written by Jay G. Mitchell

Quiz Questions on the Preceding Installment.

867. Why does the "trunk time" include all the elements of time as they are characteristic of local conditions?

868. Explain how the "trunk time" of the average call may be reduced. Are some of the time elements of each call outside the telephone company's control?

869. What is a group in telephone circuit arrangement? Give an illustration. What is the comparison between traffic fluctuations in small groups and in large groups?

870. How does the size of the group affect the number of connecting circuits required?

871. What effect does "trunk time" have on the number of connecting circuits to be provided for any group? What is the factor determining the number of connecting circuits required?

872. Why is the "trunk time" the first item of traffic information that should be determined? How can it be observed?

873. What is the peg count? How is it taken?

874. How is the peg count taken in automatic and semi-automatic systems?

CHAPTER XXVIII. Nature of Telephone Traffic (Continued).

875. *Traffic load peaks.*—After the traffic data pertaining to the load carried by the office has been recorded, it is the usual practice to place the record in graphic form. The contour of the resulting curve is a characteristic peculiar to the office concerned. In other words, similar curves platted from the traffic observations of other days will, barring abnormal conditions, show the same general characteristics.

In making up such curves it is customary to represent the successive hours of the day by equal divisions of the horizontal dimension of the chart and the number of calls per period by equal divisions of the vertical.

In such a traffic curve there are certain more or less well defined peaks. The peaks represent periods when the number of calls observed is much higher than the number observed for similar periods occurring immediately before or after. Every telephone office, almost without exception, will handle a traffic load showing one pronounced peak in the forenoon and one in the afternoon.

In addition to the two most noticeable peaks, there will be others that appear day after day in the same offices. The writer recalls one office in which a very sharp peak occurred every evening except Saturday at about seven o'clock. When the character of this traffic was determined, it was found to be due to calls for theaters and amusement places. The office in question was one serving a residence district almost exclusively.

Another very interesting fact in connection with this office, was the extremely heavy incoming trunk load that appeared every afternoon about four-thirty. Upon investigation this peak, which was not composed of originating calls for the office in question, was found to be due to calls from offices downtown to local residence circuits. The man of the house was receiving shopping instructions for the trip home at the end of his business day.

Careful analysis of the nature of traffic load peaks will often point out ways in which the quality of service at such times may be greatly improved. The illustrations presented will serve to show how conditions of this sort may be due to the simplest and most commonplace human traits. In fact, telephone traffic, owing to its very nature, is merely an index as to the collective thought of the community in which it originates.

876. *Significance of traffic peaks.*—The primary object of traffic studies of all sorts is to make possible the improvement of the service by the elimination of defects. As the result of a thorough analysis of traffic data, the equipment is quite often found to be inadequate or to be improperly arranged.

The first general condition to which it is advisable to direct attention is the character and value of the peaks found in the load curve of the office under investigation. It is obvious that a sharp peak of small duration indicates the receipt of a great number of calls in a *short* time.

Each one of the calls handled requires, sooner or later, a connecting circuit. If service is to be rendered whenever it is demanded, each call will require a connecting circuit at once. Should an interval of delay be permissible under extreme conditions, some of the calls must await the instant when a connecting circuit otherwise engaged becomes available. In other words, if instantaneous service is to be rendered, a connecting circuit must be waiting for each call as it is received.

Experience has shown that the service will be satisfactory to the public if it is instantly rendered during periods of ordinary traffic and if a delay is introduced during periods of heavy traffic. The answering time, in centrally-operated equipment, must be maintained at a satisfactory average value.

Some calls will not receive attention as promptly as calls received when the load on the office is passing through a peak. For this reason it is necessary to consider the value of the peak in connection with the value of the trunk time.

A very short and sharp peak, when the trunk time is also short, will not require as many connecting circuits to afford satisfactory service as a less pronounced peak when the trunk time is excessive. This means, for illustration, that less connecting circuits are required to handle 1,000 calls in five minutes when the trunk time is 2½ minutes than would be required to handle 1,000 calls in five minutes when the trunk time is five minutes. Each connecting circuit, in the first case, would be occupied a shorter time for the average call than it would in the other case. For this reason more calls could be handled as an average by each connecting circuit than would be possible with a longer trunk time demanded.

877. *Relation between trunk time and load.*—It is plainly evident, therefore, that the consideration of peak load data must be made with full information as to trunk time demands of such calls as are handled during the duration of the peak. This point may be expressed in another way:

Every trunk or connecting circuit, for any given wiring arrangement and related set of conditions, and under any given condition as to length of average trunk time, will have a definite normal possible hourly load that may be assigned to it for execution. Knowing the load possible for each connecting circuit to carry, for any given set of conditions, the engineer is enabled to design the circuit grouping and other facilities to meet actual conditions as found.

The relation outlined must be carefully considered, for a very common fallacy is due to the lack of thoroughly understand-

ing the matter. It is often assumed that the traffic readings, taken as the calls are received, will be satisfactory, provided that observations of the meter readings are made every hour. This is true in offices where the traffic data is carefully recorded and where peg counts are used only as a check on other conditions.

When the peg count is being taken for the purpose of analyzing the traffic load in order to rectify undesirable service conditions, the observations must be made oftener. In fact, the load curve will be more valuable if it is possible to take the readings of the meters at intervals approximating the average trunk time. It is for this reason that the determination of the trunk time was indicated as the most important early observation in the traffic study of any telephone office.

878. *Determination of frequency of making traffic readings.*—With trunk time known, it is easy to determine how often the traffic readings must be made. For illustration, assume that a certain telephone office is handling approximately 20,000 calls per day and that the busy hour load in the same office is 2,500 calls. Now, there are 60 minutes in one hour, and so it might be assumed that the traffic during any period of *two* minutes of the busy hour referred to would be equal to 2,500 divided by 30—the number of two-minute periods in one hour—or 83.

This assumption is not justifiable, however, because of the fact that the duration of the peak—one hour—is too long in comparison with the probable average trunk time in the office. It is quite possible that the busy hour traffic of such an office—2,500 calls—would be negotiated in 40 minutes of actual equipment time instead of in 60. Should this be the case, it is evident that not 83 but 125 calls would be in existence during each average period of two minutes. This figure is obtained by dividing 2,500 by 20—the number of two-minute periods in 40 minutes.

Should the first assumption as to the character of the traffic be true, only 85 connecting circuits would be required to give instant service when demanded. Should the second assumption be true, on the other hand, 125 circuits would be required *to give the same grade of service.*

The actual condition would be shown at once by a traffic curve based upon readings of the meters made at frequent intervals. Should the trunk time be two minutes and should the readings be taken at intervals of two minutes, the exact conditions would become apparent. Nothing would be left to calculation in the determination of the equipment facilities and the only item permitting of the exercise of discretion on the part of the engineer would be the character of service to be furnished during the periods of heavy traffic.

When it is permissible to lengthen the operator answering time in centrally-operated equipment, a smaller number of connecting circuits may be provided than would be necessary if the operator answering time is to be kept at a minimum. The same statement is true in subscriber-operated equipment, such as full automatic.

When the number of connecting circuits in any group is insufficient, service cannot be obtained. It is of the utmost importance, therefore, that the connecting facilities be properly grouped for peak-load conditions. Ordinarily, if the facilities are properly grouped and are adequate for peak-load conditions, it is certain that they will be adequate for conditions obtaining during periods of traffic below peak values.

Except for purposes that are entirely unrelated to the design of the equipment grouping, there is no value in traffic observations taken at intervals that are shorter than the average trunk time. Such data, in fact, is rather apt to be confusing. The writer has found that observations taken at five-minute intervals are sufficiently accurate for the most exacting conditions. It is extremely difficult, in an office of any size, to take traffic readings, even as often as this, owing to clerical and recording troubles.

879. *Typical traffic curve.*—The curve shown in Fig. 262 is typical of single office exchange districts in which the traffic is rather heavy. The total traffic in this office on the day on which this data was recorded (Dec. 24) was approximately 47,500 calls. The total number of calls handled during the busy hour was approximately 5,000.

Since the readings on which the curve is based were taken at intervals of one hour, it will be readily seen that the busy hour occurred between 9 a. m. and 10 a. m. The total number of subscribers' circuits giving rise to the traffic conditions shown in the curve was approximately 1,800.

880. *Average calling rate.*—In considering the traffic data relating to the curve in Fig. 262, it is plain that a load of 47,500 calls per day originating in 1,800 subscribers' lines would fix the average number of calls per line per day at 47,500 divided by 1,800, or 26.25.

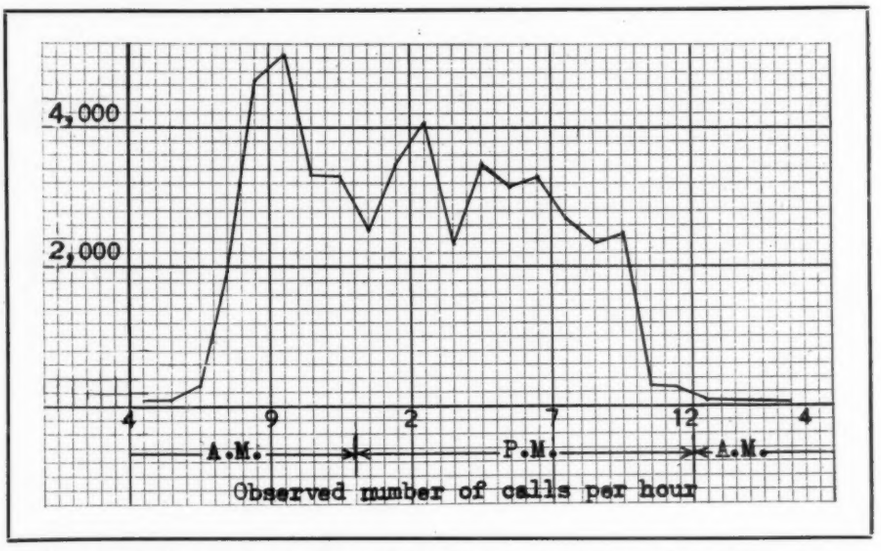


Fig. 262. Typical Traffic Curve in Single Office Exchange with Rather Heavy Load.

This figure, for any given office, is known as the average calling rate. It affords a quick and rough method of comparing the loads of different offices. For instance, the rate mentioned—26.25 calls per line per day—is exceedingly high for any office of the size involved. It is a high calling rate for *any* office and is due, in the case cited, to the fact that the load was observed on the day before Christmas, a very busy day in all offices.

In small offices the average calling rate is generally in the neighborhood of 10 calls per line per day. It is found to vary all the way from three or four calls per line per day to the extremely high value found by the writer in one common-battery centrally-operated office of 65 calls per subscriber's line per day.

In designing the power plant for telephone offices, the total number of calls to be handled per day is of the greatest importance. For this purpose the average calling rate serves as a valuable medium of comparison. It is evident that each call, under any given set of average circuit conditions, will require the expenditure of its own definite assignment of energy from the common battery and that the energy withdrawn from the battery must be restored to it from the charging equipment. Power engineers depend, therefore, upon the average calling rate in offices for which power equipment is being designed. (*To be continued.*)

Beresford, S. D., Exchange Sold.

The local telephone exchange at Beresford, S. D., has been sold by J. W. Smith to the Bell company, which has already taken possession.

What Is Your Company Doing?

Chats About Company Doings.

By S. R. Edwards.

Since the publication in TELEPHONY of December 22 of E. C. Blomeyer's article, "The Line That Farmer John Built," several requests have been received for reprints for use in educational work among the farmers. Mr. Blomeyer, in this article, certainly pictures in an interesting manner the existing situation as it relates to telephone service in the rural districts. He presents the arguments as to why commercial companies should receive higher rates than the mutual associations which have built lines and supplied the farmers with telephone service in so many communities.

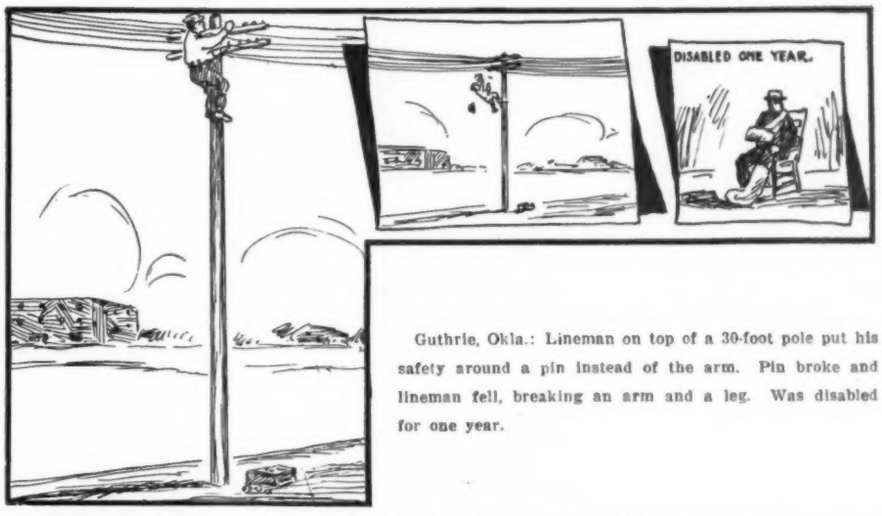
It appears to us that telephone companies operating in rural communities would find this article of great benefit if it were widely distributed among their rural patrons. Should others of TELEPHONY's readers desire to secure reprints of this article, they may be obtained at a nominal cost, the price, of course, depending upon the number of requests received for reprints. As the number of reprints which may be obtained will be limited to those who make application, we should be promptly notified as to the number of copies desired.

Telephone men generally understand that as the number of telephones connected to an exchange increases, the investment and expense per telephone also increase. And it is this peculiarity which distinguishes the telephone industry from other manufacturing or production enterprises. In the average business, it is a general rule that the greater the production, the less the cost per unit, and people generally apply this to telephone service.

In its educational campaign, the Modern Telephone Co. discusses this subject in one of its weekly advertisements. The reason for the increase in the investment and expense per telephone as the list of subscribers grows, is set forth briefly and concisely.

In this connection the Modern company might have observed that while the cost increases with the subscribers, the service rendered is also enlarged; that is, the subscriber has been furnished with a greater calling list and the service value of his telephone is considerably enhanced.

The lineman, it is quite evident from the Safety First Bulletin of the Texas Telephone Co., should be constantly on guard when working upon a pole. The illustration taken from the bulletin depicts an accident due to carelessness in



Guthrie, Okla.: Lineman on top of a 30-foot pole put his safety around a pin instead of the arm. Pin broke and lineman fell, breaking an arm and a leg. Was disabled for one year.

"Safety First" Bulletin of the Texas Telephone Co. and Associated Companies Tells a Story Graphically and to the Point—Actual Occurrences Are Cited as Examples.

MODERN TELEPHONE COMPANY
INDEPENDENT
TELEPHONE
INDEPENDENCE CITY, ILLINOIS

As the Number of Telephones Increases, the Investment and Expense per Telephone Increase

This is unlike other industries, due to the growing amount of intricate and expensive equipment necessary to promptly inter-connect all subscribers; because the average number of calls per telephone increases as the opportunity to talk grows, and because the force of employes required to make the connections increases out of proportion to the number of additional telephones and to the gain in revenue.

The number of employes per telephone, the average wage per operating employe, and the price of all materials and supplies used in this industry, have steadily increased in the last few years.

The company must grow with Independent City, must properly maintain its plant, replace and improve equipment and furnish service, pay expenses and secure the necessary capital for extensions and improvements.

The rates must be fair to attract and satisfy subscribers—and fair to the company, so it may furnish efficient service.

Modern Telephone Company
The Independent Building
Corner Service and Progress Sts.
Contract Dept. No. 100

The Modern Telephone Co. Runs an Advertisement Each Thursday in the Local Evening Paper at a Cost of $4.20. This is the Full Size of the Advertisement.

not properly securing the safety belt before beginning work.

Not only must the lineman watch out that the spurs of his climbers are properly positioned on the pole and the safety belt correctly adjusted, but he must likewise watch his hands and the movements of the body as he does his work.

In Temple, Texas, shortly after a sleet storm, a lineman climbed a 45-ft. pole. He neglected to put his "safety" around the pole before beginning work to lay up a wire around the end of a 10-pin cross arm.

He was wearing heavy gloves and the top of the cross arm was covered with ice, but he took hold of the arm with his right hand and reached out with his left hand for the wire. His right hand slipped on the ice on the top of the cross arm and he began to fall outward from the pole. He caught a pin but it broke and he fell about 40 feet, breaking an arm and a leg.

Commenting on this accident, the bulletin says:

"Experience joined with common sense to mortals is a providence." Experience, it should be remarked, is a hard teacher.

Many telephone companies which employ collectors are confronted with the problem of the collectors having to call several times at a residence because of no one being at home. The Union Telephone Co. of Erie, Penna., provides its collectors with a small card about 3¼ ins. wide by 2½ high which they leave at residences where no response is received to their repeated rings on the door bell.

The illustration shows the design and inscription upon the card. A collector inserts the amount of the bill in the space provided, and then slips it under the door or in the mail box.

The Union Telephone Co. has found the scheme to render big returns. Quite a large number of subscribers come into

A Collector's Calling Card.

the office in a day or so and pay the bill, bringing the cards with them.

It might be mentioned that the shield which surrounds the notice on the card, is of the same design as that used on all company advertising and is, therefore, readily recognized by the people of Erie.

Telephone men have strange experiences. Only recently John Z. Miller, general manager of the Mutual Telephone Co., of Erie, Pa., had a man complain to him most emphatically that his name had been misspelled in the company's directory. When Mr. Miller asked the man for the correct spelling he found out that it was "Skrzypteak."

Louis Pitcher, manager of the Dixon Home Telephone Co., Dixon, Ill., received a report from one of his troublemen who had just returned from an inspection trip of the company's rural lines, relative to a request made by "the lady" on one of the farmers he visited. She asked the troubleman if he wouldn't put one of those "Rubber Buttons" on her telephone. She had seen some of the so-called battery savers which the company has installed on some of their rural telephones in order to conserve the batteries.

Indianapolis (Ind.) Telephone Co. Closes Successful Year.

The Indianapolis Telephone Co. of Indianapolis, Ind., closed a highly successful year's business with a farewell gathering to the old year 1917. The meeting was held on the fourth floor of the company's building between the hours of four and six p. m. on December 31. Such employes as could be spared without affecting the service, were in attendance.

President William Fortune thanked the company's employes for their loyalty to the flag and the company and expressed appreciation of the splendid showing of 100 per cent. membership in the Red Cross campaign and the willing support given to the Y. M. C. A. work, the sale of Liberty Loan bonds and other war enterprises.

General Manager E. L. Cline gave an interesting review of the year's work and the success of the automatic service in Indianapolis and the nearby exchanges. Max F. Hosea, as usual, contributed one of his humorous sketches entitled "I love the spirits." Commercial Superintendent G. B. Wellbaum dwelt on the need of every employe going "over the top" in 1918 for the good of the cause. F. V. Newman, assistant to the president, presided at the meeting.

A committee of the employes was named to present for consideration a plan for the contributing of a proportionate sum of their salary each month to the support of enterprises to assist in the winning of the war.

One of the strong patriotic features of the meeting was the calling of the roll of honor by Chief Clerk R. L. Stevens, who also read letters received from the 24 employes who are in the country's services. Acknowledgments were made of the receipt of the Christmas gifts from their former associates. W. P. Loomis, who was formerly employed as a salesman in the commercial department, but now a member of the Royal Flying Corps, created much enthusiasm by relating his interesting experiences in "flying high."

Meetings of employes and officers are always good for all concerned. And when the other members of the employes' families are included, there is certain to be greater benefit accrue to the company through the family interest aroused in "our job."

Seven Excellent Reasons for Good Service in the Clarendon, Texas, Exchange.

Why Such Excellent Service Is Being Given at Clarendon.

The splendid service which the people of Clarendon, Texas, are receiving from the Clarendon Telephone Co. is attributed largely by Manager T. L. Benedict to the excellence of his operating force. Most of his operators have been in his employ for some time, one of them, Miss Bee Morris, having been employed at the exchange 12 years.

The girls in the accompanying photograph of the Clarendon operating force, are, from left to right, as follows: the Misses Agnes Hays, Catherine Hinton, Myrtle White, Retha Lemmon, Fay Moore, Bee Morris and Cricket Talley.

Operating 503 telephones in a city of between 2,000 and 2,500 population, the Clarendon company is said to have the greatest telephone saturation for a town of its size in the country. In addition to the local subscribers, it serves over 200 rural patrons.

Sundry Snapshots Along the Trail

Observations and Comments, Pertinent and Otherwise, On the Sunshine and Shadows of Telephone Work

By Well Clay

The straight road seems the longest
And the level road lacks charm,
Where there's naught to make one stumble,
Nor dangers that may harm.

But the road that's full of turnings,
Through the valleys and the hills,
Where one has to watch one's footsteps,
Is the one that brings the thrills.

Just now we are taking a new turn on the telephone road and starting down the stretch of 1918 with considerable change of view from what we had a year ago. True, then we had a lot of things to think about, but the things we have to think about now are things to not only think about but things to do, and get on the job of doing them at once.

Will Clay As He Appears to His Friend the Cartoonist.

The Interstate Commerce Commission has virtually admitted that the railroads need a lot more money, with which to finance their necessary replacements and extensions, than their utmost earning power will allow. So it follows that the commission, in making that statement, has virtually admitted that it has been in error the past years in not allowing earnings sufficient to take care of these things, and leave enough, besides, to attract capital by paying a reasonable dividend.

I believe the biggest blunder the state of Minnesota ever made was when misguided enthusiasts in public office thought they had saved the people of the state millions of dollars by forcing the railroads to carry passengers for two cents a mile when, as a matter of fact, they have brought about a condition which makes it almost impossible for railroads in this state to get outside money, or any money at all, by sales of stock.

I believe telephone companies should try to have the state commissions allow a larger margin of profit to stockholders than 6 per cent for dividends. The commissions are clinging to the idea that 6 per cent ought to attract capital. It should and would if the capital was safeguarded against unusual ravages which are apt to wipe it out along with the physical property representing it, in case of sleet storms, earthquakes, cyclones, etc.

None of these hazards can remove a mortgage from a farm, and yet most banks are allowed to pay from 15 per cent to a much higher figure as dividends. Why not limit the banks to 6 per cent as well as other public utilities who are giving every bit as valuable service to the community as they?

With four or five banks to every small community, paying large dividends and duplicating overhead charges in nearly all cases unnecessarily, it seems that the borrower is paying too high a rate for his money and that, if the banks were recognized and supervised the same as other utilities, there might be a chance for other ventures to have a more reasonable margin of safety.

Now that the government has taken over the railroads, we will see what will happen to freight rates.

I had a stockholder once who was finally persuaded to buy a few shares because he thought we were charging the farmers too much for service and, therefore, he reasoned that we would be able to pay nice large returns on stock. When he had been in a year or so, he was the most loud-spoken of all in insisting that we make the farmers pay more because, he said, "they can afford it and we need the extra money."

In case the government finds out that it has done wrong in denying, heretofore, the railroads' requests for a raise, will it see that the money lost to stockholders through their action in the past is restored?

There is no chance; therefore, any telephone man who is waiting for the government to take hold of his plant and pay him back what he has run behind in the past from charging too little, had better wake up and get busy.

Let the average telephone man take an account of the manner in which his fortunes have kept pace with the fortunes of his average rural subscriber in the past few years and see whether the subscribers' complaints are genuine, or whether he is merely whining from habit to cover up his prosperity.

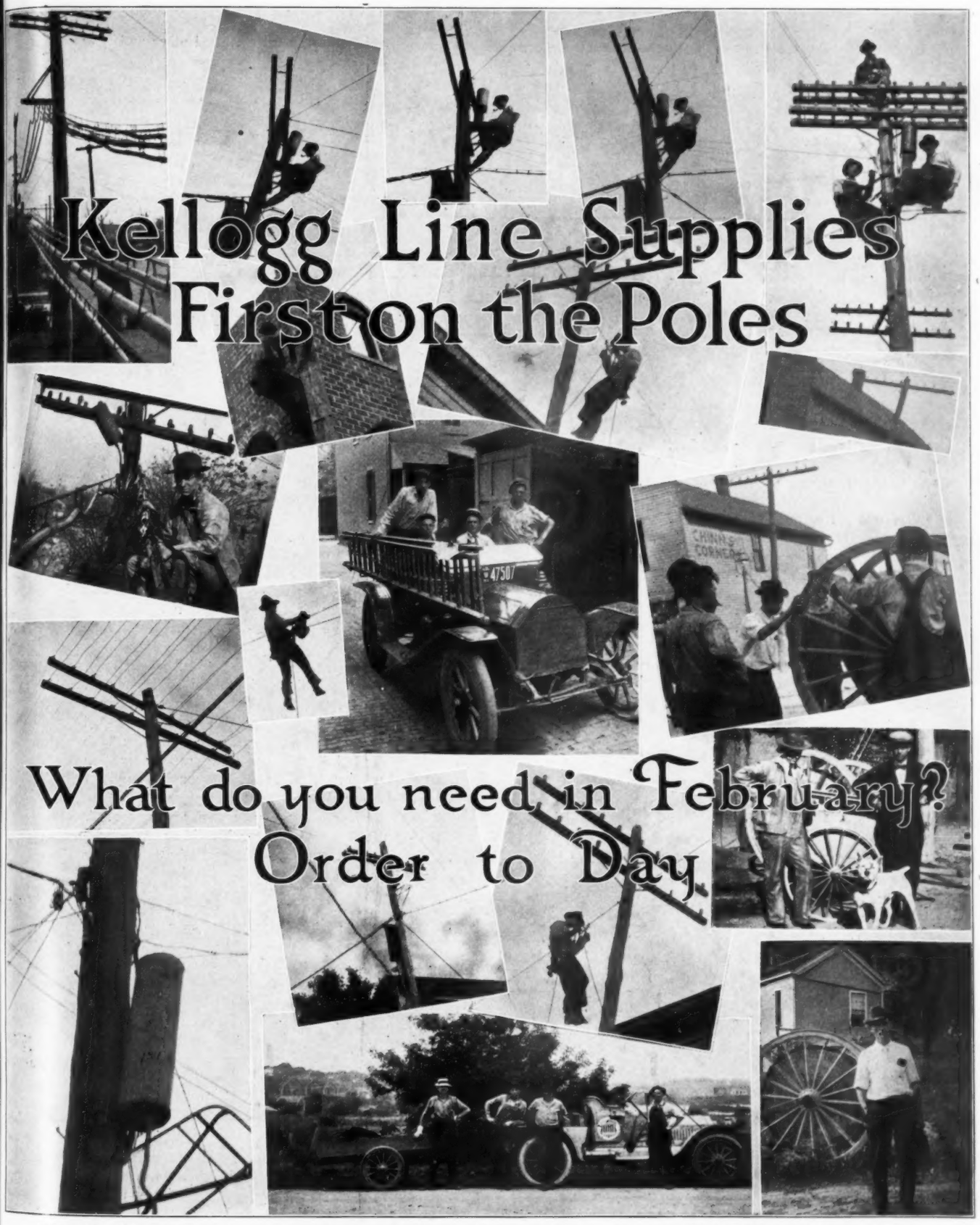
In the drive for memberships for the Red Cross fund a few days ago, one farmer gave as his reason for not being able to contribute more than a dollar the fact that he had just bought another farm and did not have any ready money. Think of it! This farmer wanted the other fellow to pay the insurance on his investment.

It has been the same way with telephones. The poor, rich farmer has made a loud noise and yelled in pain every time he has had to pay for so small a thing as a message to a neighboring town, holding that he ought to have a free privilege because he was paying for a telephone.

We hear a great deal about the idea of preparedness and still we had to get a hair-raising sight of the war god coming around the corner in our direction, before we began to get together anything in the line of defense.

We have been talking better rates for

"Heavy Weather in Central States, More Coming"—
Including Spring Sleet Storms. From complete
stocks we can assure you prompt shipments of
Supplies---Telephones---Switchboards.
Its The Well Built Line
That Weathers the Storm



KELLOGG SWITCHBOARD & SUPPLY CO.

CHICAGO, ILLINOIS

Branch Offices: Kansas City, Mo., San Francisco, Cal.

Columbus, Ohio, 409 Huntington Bank Bldg.

DISTRIBUTING HOUSES: Canada West Electric, Ltd., Regina, Sask., Can.; The McGraw Co., Sioux City, Iowa; The McGraw Co., Omaha, Neb.; Pacific States Co., Los Angeles, Cal., Oakland, Cal., Portland, Ore., Seattle, Wash.; Northwestern Electric Equipment Co., St. Paul, Minn., Duluth, Minn.; Tower- Binford Elec. & Mfg. Co., Richmond, Va.

long months, but the most of the telephone companies had to see Old Man High Prices stalking through their invoices before they really believed they were to be in the war and not a side line spectator. And of the increases in rates asked by public utilities of state commissions last year, 86 per cent were granted.

What is going to be the next move? Who is going to see that we get a safer margin of profit?

It will probably be the same person who dug the worms the last time you and your wife went fishing, if it is done at all.

If it is not done at all, you lose, and a dollar lost in a misdirected effort is gone just as surely and completely as a dollar dropped off the bridge.

The new year is a good place and time to start on any new undertaking, but whatever is started then has to be pushed just as hard to be made successful as at any other time.

APHORISM: The burden one carries the farthest is one's own.

Putting Through a Rate Increase

Raising the Rate in Youngstown, Ohio, Through Public Confidence—Progressive Steps Taken by Ohio State Telephone Co., Which Resulted in Establishment of Higher Rates Without Loss of a Single Telephone

By P. L. Frailey

An engineering study of the rates prevailing in the Youngstown exchange of the Ohio State Telephone Co. brought to light the fact that charges for business service were all out of proportion, being far too low. In the face of increasing costs of materials and labor, this study showed quite clearly the immediate necessity of rate raising.

To forestall the attitude so frequently taken by newspapers and the general public toward any petitions for more revenue on the part of public utilities, it was decided to take the problem direct to the papers and, as directly as possible, to the public, and explain all conditions bearing upon the change of rate proposed.

First of all, a letter was prepared to send to subscribers. In this letter the effort was made to explain every phase of the change in detail and also to convince them that this new rate was necessary to continue good service. We did have this one point to bank on—the point of good service. It is very doubtful, in my mind, if the rate raising could have been achieved so successfully, if the service had not been so very good.

The letter to residence subscribers was as follows:

THE OHIO STATE TELEPHONE COMPANY.
21 EAST RAYEN AVENUE,
YOUNGSTOWN, OHIO.
June 29, 1917.

Dear Subscriber:

Under our new rates, your residence telephone will cost you actually no more than it has in the past—

Provided you pay your bill on or before the 15th of each month.

All residence telephones, main line, two-party and four-party alike, will be charged 25 cents more per month, after July 1st. *But that 25 cents is discounted if the bill is paid at our office on or before the 15th of each month.*

By saving us in this way the expense of *collecting* our bills, the subscriber is helping us in our effort to hold down the residence rate to a net amount no greater than it has been, in spite of the rising cost of maintaining "automatic" service.

Very respectfully yours,
THE OHIO STATE TELEPHONE COMPANY,
G. G. King, Manager.

At the bottom of the letter in bold face type was published "The New Rate Schedule Complete."

In the meantime, Manager G. G. King had gone before the proprietors of the two local newspapers and laid his cards on the table. He showed them clearly, in a way that any business man could understand, what effect increased costs of doing business would have upon keeping up service. Since newspapers have not been excepted in the general rise in cost of doing business, both of these men were able to appreciate our position, so they gladly promised not only to prevent criticism of the matter, but at least in a mild way to boost it. And actually, in an editorial way, both papers did support the advance.

Several days after the announcement of the new rate, an inspired article did find its way into one of these papers. We say "inspired" because we traced it through and found that it actually was inspired. The article was as follows:

'Phone Rent Raise Creates Big Howl.

One long, loud and simultaneous howl is going up from many business men who have just received notice of the increase in automatic telephone rent for business houses. The new rates make the merchants pay $1.50 more a month for a main line. The old rate was $3 a month.

The merchants declare they have been discriminated against because it is known they are forced to have the telephones. The increase in residence telephone rates is but 25 cents a month and this is discounted if the bill is paid within the time specified, thus making practically no increase. The rate for the business telephones, however, is increased $1.75 with a 25-cent discount if the bill is paid within the specified time.

Some of the merchants are organizing to install four-party lines which they say can be secured under the new rates for $2.75 with a 25-cent discount, thus giving them telephone service at less than the old rate.

We immediately wrote a five-column, 15-inch advertisement, reproduced on the opposite page, in which we treated every possible point of the rate raise. We told, first of all, why we had been forced to raise rates, pointing out that we were the last and not the first to increase our prices, showing that clothing and foodstuffs had increased on an average of 50 per cent in two years.

In the center of the advertisement was a chart which we found originally in TELEPHONY and which we took the liberty to use, showing the relation between increased cost of usual commodities and the increased cost of both materials and labor used in telephone practice. The matter of residence rates and business rates was treated separately.

Toward the end of this advertisement we presented actual comparisons between the years 1913 and 1917 and concluded the advertisement with the sentence: "We shall be glad to give explanation in greater detail to any person desiring it."

This last advertisement seemed to "put the thing over"—we had no kick after that. The very considerable rate raise—as much as a dollar-and-a-half a month on main line business telephones—was effected without the loss of a single telephone. Forty-seven telephones were regraded and during the period of rate raising our normal gain in business was maintained.

It seems to me that the important thing when a company determines to raise rates is to know actually what it costs to do business. Without knowing this, it is at a loss both before the commission and before the public.

If it can substantiate its claims for higher rates and prove a reasonable right to this action and can get its message across to the public, the consequent understanding of its difficulties will create an element of sympathy for it, especially among business houses and, indirectly, with residence subscribers. My notion is, also, that there was never a time like now to raise rates, for people are accustomed to paying more for everything and are naturally in a less combative mood toward increased prices.

High Costs Forced Us, Finally, to Raise Rates

--No *Net* Increase in Residence Rates

---Business Rates Raised According to Use

As announced June 1st, when our new rates were filed with the Public Utilities Commission at Columbus, the action was found necessary because of a steady, uninterrupted increase in cost of every item of material and labor used in this business. It was only when these mounting costs assumed proportions that caused this company to lose thousands of dollars that the rate increase was considered.

Last, Not First, to Raise Prices!

To the thinking person, it will not seem strange that we have raised rates. For is there anything that has not gone up in price in the last two years? Government statistics show that our merchants selling clothing and foodstuffs have found it necessary to increase prices an average of 50% in 2 years in order to maintain their just profits. In only one instance of our rate change has the increase been as much as 50% and that is in the case of the main line business telephone which has been increased this much on the basis of use.

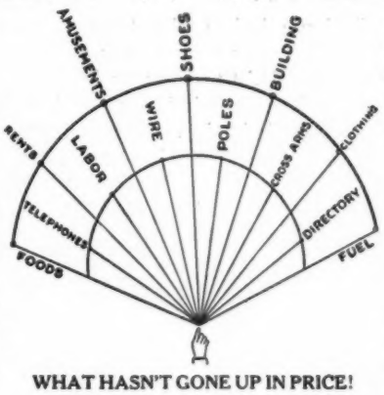
"Automatic" Now the Business Telephone—Business Rates Raised on Basis of Use!

As the subscribers were notified, the following business rates went into effect July 1st:

Main Line	**$4.75**
2-party	**3.25**
4-party	**2.75**

All above rates subject to 25 cents a month discount if paid on or before the 15th of each month.

Without question "Automatic" is now the business telephone of Youngstown. Meter readings of the movements of the "Automatic" switches in our plant, operating business lines, show a continuous severe usage that we believe is not paralleled by any telephone company in the state. Main line business telephones carry an almost ceaseless flow of business messages. It is upon this basis of use that we have established the new rates. It is proper to state also that our maintenance costs are fixed on this same basis of use. We believe it is both good business for us and fairest policy to our subscribers to place the greatest increase on that service which has the greatest use and which costs so much more than any other to maintain.



WHAT HASN'T GONE UP IN PRICE!

Saving Collection Cost Enables Us to Furnish Residence Service At No Net Increase

Under our past methods we found the cost of collecting, especially in residence districts, to be very great—in fact, so great that in considering our costs we felt that if we could eliminate this expense of collecting it would not be necessary to make any net increase in our residence rates. Accordingly, in the newspapers June 1st and by letter before July 1st, residence subscribers were notified of the following rates:

Main Line	**$2.25**
2-party	**2.00**
4-party	**1.75**

All above rates subject to 25 cents a month discount if paid on or before the 15th of each month.

It will be noted that with the 25-cent discount for paying the bill on or before the 15th, the rate remains the same as before.

In other words, the residence subscriber, by paying his bill at our office in the Stambaugh Building or on Rayen Avenue in person or by mail and promptly when due, saves himself the large increase that would have been necessary in residence rates had old methods of payment been continued.

There Is No Advantage to a Community for a Public Service Corporation To Operate at a Loss---Only *Profitable* Companies Are Kept Improved

Any business man will tell you that money is not invested where there is not a return to be had on the investment. In a public service corporation extensions requiring large investments are necessary continuously. As a city grows, the demand for service increases. Money has been invested in this Ohio State property without stint and there is no doubt that extensions of its service will always be made in advance of the city's needs. You can be almost certain that if our Public Service Corporations render the city poor service, it is because the property is not a paying one and money for increased facilities is not easily to be had. It is wise to consider these things as they are. No community can benefit from any public service corporation operating at a loss.

We have said that this company has operated at a loss of thousands of dollars in the last two years. The community has not suffered because extension of facilities has been made in spite of this. In increased rates now they guarantee maintenance of equally good service in the future. Everyone knows that labor in all fields costs from 50 to 100 per cent more and herewith are some of the items of material costs which show graphically the increase we have been forced to pay for materials:

	1913	1917
Copper Wire, base price per pound	.19	.385
Iron Wire, base price per pound	.03 7-8	.06 7-8
Dry Batteries, each	.13 1-2	.23
Cross Arms, each	.53 1-2	.63
Cedar Poles, 25 ft. 7 inches, each	3.00	4.50
Cedar Poles, 30 ft. 7 inches, each	5.06	7.20
Cedar Poles, 35 ft. 7 inches, each	8.95	11.70
Cedar Poles, 40 ft. 7 inches, each	11.35	14.30
Cedar Poles, 45 ft. 7 inches, each	15.55	16.95
Clamps, 3-bolt	9.00-C	16.45-C
Bracket, Pole	3.20-C	7.25-C
Bracket, House	2.10-C	4.90-C
Bolts, 5-8x9	3.92-C	6.54-C
Bolts, 5-8x10	4.31-C	5.80-C
Bolts, 5-8x12	3.95-C	6.90-C
Bolts, 5-8x14	4.40-C	7.40-C
Bolts, 5-8x16	5.32-C	8.20-C
Bolts, 1-2x16	4.85-C	9.00-C
Bolts, 1-2x20 D. E.	5.46-C	11.80-C
Braces, Crossarm 22	37.65-M	65.00-M
Braces, Crossarm 24	39.00-M	80.90-M
Braces, Crossarm 26	50.00-M	75.40-M
Braces, Crossarm 30	56.75-M	87.25-M
Rods, Anchor, 5-8x6	22.70-C	37.20-C

The price on lead sheath paper cable has in some cases trebled in the past three years, for instance, 25 pair cable, which in 1914 cost us a trifle over 5 cents, is now quoted something over 15 cents; while 600 pair cable, which three years ago cost us in the neighborhood of 50 cents, at present is quoted at about $2.00 per foot. The cost of various items of material, not listed above, has increased materially. All prices are still advancing rapidly.

WE SHALL BE GLAD TO GIVE EXPLANATION IN EVEN GREATER DETAIL TO ANY PERSON DESIRING IT

The Ohio State Telephone Company

"A GREAT SYSTEM IN A GREAT STATE"

G. G. KING, General Manager **Commercial Department 4246** **21 East Rayen Avenue**

Advertisement Which Put the Raise Over—It Replied to an "Inspired" Article in Local Paper.

Commissions, Courts and Councils

Discussions and Rulings of State Bodies Having Supervision Over Telephone Companies—Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchises, Rates and Service

Fixing Valuation Upon Telephone Plant for Rate Purposes.

Several new questions of telephone regulation law, as they apply to Nebraska matters, are raised in briefs filed with the state railway commission in support of the Monroe Telephone Co.'s insistence that a higher valuation should be placed on the Albion exchange, which it desires to purchase with a stock issue.

C. J. Garlow, president of the Nebraska Independent Telephone Association, who appears for the Monroe company, insists that in calculating a fair average for the costs and revenues for a period of years the economic changes produced by the war must be taken into account. He insists that it is not within the province or duty of a regulatory commission to assume, in the face of the facts and past experiences, that after the war the prices and operating costs will return to the old level that existed before the world became involved.

He also raises the point that the commission has no jurisdiction, in a proceeding looking to the fixing of values for sale or exchange, but that its sole interest arises with respect to matters that have to do with rates and service regulations. The value for rate-making, he says, is a particular value for a particular purpose based on a specific consideration of the elements found relevant when viewed in the light of such particular purpose.

The other point brought forward is that the commission should allow an additional value to that found by inventory as a going value, since that is an item of value in the property, that it is a property right and should be determined as a value upon which the owner has a right to earn a fair return on whatever part thereof is devoted to public use. He says that the powers of the commission includes matters connected with the probable future conditions of operation and increases in cost because of the war and the added income and other taxes, when considering returns.

The matter has been before the commission in various forms for some months, but no formal argument or presentation of the legal points involved had been heretofore made.

Nebraska Company to Go Upon Dividend Paying Basis.

The Glenwood Telephone Co. has finally capitulated in its dispute with the Nebraska State Railway Commission over discriminatory charges and practices frowned on by the regulatory body. It has voted to go upon a dividend paying basis instead of, as in the past, distributing profits through making lower charges to stockholders than to renters.

The Glenwood company operates a dozen exchanges in Adams and Webster counties, together with all attached farm lines, and gives free service over all to those having instruments. At the present time about 10 per cent of its telephones serve non-stockholders, mostly renters upon farms.

For some years the company has maintained a schedule of rates that approximated 83 cents a month for stockholding users and $1.50 to renters who owned no stock. The commission said this constituted discrimination. The company insisted that it did not because its practice was to require a stockholder to build his own stub line and pay for his own instrument, whereas the renter had all these built and supplied him. The difference in price constituted the returns upon the stock.

Following instructions made by the stockholders at their annual meeting, the company officers have filed with the commission a revised schedule of rates covering each exchange and all farm lines. The company will hereafter operate on a dividend basis and will make the rates the same to stockholders and non-stockholders. Generally speaking, the new rates are $1.25 a month for business, residence and farm alike.

Difficulty in Securing Bell Extensions in Nebraska.

While the Independent telephone companies of Nebraska are meeting all demands for extension of service, even where the new rural lines required to be built call for expenditures that are in excess of the average investment, the Nebraska State Railway Commission is having considerable trouble getting the Nebraska (Bell) Telephone Co. to do likewise. In a number of differences between would-be patrons and the Bell, the latter has emulated the pulled cat in its resistance.

The Bell company induced the commission some time ago to place the limit it need expend for rural extensions at $75, and it has given as its reason for not furnishing other service complained of that its plants are working at top speed on government orders and that, because of some 7,000 employes having entered the service, it is impossible to produce certain equipment needed to fill the orders over which complaint has been made.

On a recent visit to the commission Guy H. Pratt, the commercial superintendent for the Northwest group, said that General Pershing found the type of construction in use in France so far inferior to the systems in America that he requisitioned materials and men from America to install one that would give complete service. Mr. Pratt said that the Bell men found telephone engineering and plant practice so far behind the times that the abandonment of the use of the telephone for sending important war messages in London and Paris had been forced through the inability of any means or lack of knowledge of how to detect wire tapping and where the cut-ins had been made.

Discontinuance of Service Owing to Non-Payment of Rental.

An unusual state of facts is presented in the complaint filed by John J. Nichols, a York county farmer, against the Lincoln Telephone & Telegraph Co., that he had been arbitrarily deprived of telephone service at his residence.

In his complaint to the Nebraska State Railway Commission, Mr. Nichols said that he had been three months in arrears on his telephone bill, and the company sent him notice that unless he paid by noon of a certain day he would be cut off the exchange. He says the notice came to him on the morning of the day set for action. He called up the manager and said that owing to the severe illness of his wife he was unable to come to town and pay up, but that he would send a check that would reach the company's offices the next morning.

In spite of this, the company's men came out and cut the wires. That night his wife died. He adds, however, that he was not deprived of service that night, as he climbed the pole where the wire had been severed and made a reconnection himself. The company's side of the matter has not been filed.

Nebraska Company to Make Accounting for Excess Dividends.

The Arlington (Neb.) Telephone Co. has been caught in a legal deadfall by the Nebraska State Railway Commission. Not long ago it asked permission to issue $6,500 worth of stock to repay stockholders for money advanced to rebuild lines destroyed by a sleet storm. A survey

of the books of the company by an accountant led to a report to the commission that the company had been paying too much money for dividends in past years and had not been setting aside enough for depreciation.

Following the accountant's report, the commission ordered the company to show cause why the stockholders should not be required to pay back nearly $10,000 received in excess dividends in past years. It held that the company had violated a legal obligation in that it had paid more than a reasonable return. It also said that apparently $7,600 upon which dividends were being paid had been expended upon betterments out of surplus funds.

Rather than face this sort of an inquisition, the manager of the company visited the commission and filed a withdrawal of the application for a stock issue, saying that the company would have to repay the stockholders out of earnings. He was told that it could not be charged up as an operating expense, but was allowed to withdraw the application. He was further informed that the commission would not withdraw its order upon the company to show cause why the dividends paid in past years in excess of 7 per cent should not be repaid, as well as the surplus fund properly accounted for.

A date for hearing to suit the convenience of the company will be set later.

Division of Tariffs for Toll Telephone Calls in Nebraska.

A mass meeting of the farmers and citizens of Gandy, Logan county, Neb., was held recently for the purpose of trying to secure an agreement between the Gandy Switching Co. and the Stapleton Co., owned by a Mr. Loudon. The former offered to pay for a half interest in the line between the two towns and give free service both ways. This was refused, as was also a proposition to buy half the line and divide the receipts equally. The Gandy people were also willing to give him 85 per cent of the tolls from Gandy passing through Stapleton, but he asked for 90 per cent on calls between Stapleton and Gandy originating in Stapleton and 85 per cent when they originate in Gandy.

The matter will probably be referred to the railway commission for an order relating to the division of tariffs, although the sentiment of the meeting was for one company owning the entire county system.

Subscriber May Charge "Sponger" Five-Cent Message Rate.

Any telephone company in Nebraska that desires to protect itself from the individual who makes a business of dropping in on a neighbor when he desires to use a telephone may secure permission from the Nebraska State Railway Commission to charge a message rate of five cents.

The commission made this plain in granting the application of the Cuming County Independent Co. for establishing such a charge on its Wisner exchange. The commission holds that the telephone company is entitled to pay for any service rendered, and that the use of its lines by persons who do not pay constitutes a discrimination against the paying subscriber. The charge is not intended to bar the casual user, but to reach the habitual sponger.

Wife May Sell Telephone Number of Deceased Husband.

A wife has the right to sell the telephone number and good will of her deceased husband and the buyer has the right to exclusively enjoy them, according to a ruling at San Francisco, Cal., December 21 by Superior Judge John T. Nourse. The decision was rendered in a case where one doctor who had purchased from a widow the right to use the name, good will and telephone number of her husband took action against another member of the profession, who, it was alleged, endeavored to have his telephone number listed in the name of the deceased.

Negotiations for Purchase of Bell Exchange at Blair, Neb.

The stockholders of the Blair (Neb.) Telephone Co. are negotiating with the Bell company for the purchase of the latter's exchange in that city, one of the few Nebraska towns where dual service is still given. The deal was first taken up early last spring, when the Bell people agreed to fix a price, but the changed conditions brought about through the entrance of the country into war postponed further consideration.

The Independent company has an exchange with 1,200 telephones, a little over half of them being rural connections, and is the stronger of the rival exchanges.

Inventory of Long Distance Property in Swift County, Minn.

An inventory of the long distance telephone property of the Tri-State Telephone & Telegraph Co. in Swift county has just been completed by the Minnesota Railroad & Warehouse Commission. The field work has been conducted by a crew in charge of C. E. Hoy, of Minneapolis.

Dallas Merger Ordinance to Go to Referendum Vote.

After a recent conference with representatives of the Dallas telephone companies, Mayor Lawther announced that the proposed merger franchise ordinance authorizing the consolidation of the Southwestern and Dallas Automatic telephone systems in Dallas, Texas, will be submitted to a referendum vote of the people at the April elections.

Postal Company to Extend Its Toll Lines to Waco, Texas.

The Postal Telegraph-Cable Co. has been granted a franchise by the city commission of Waco and will soon extend its long distance lines into that city. The Postal company already has toll lines connecting some 20 cities in the state of Texas.

Government Ownership of District of Columbia Telephones.

Government ownership of the telephones in the District of Columbia is provided for in a bill introduced recently in the United States senate by Senator Gore of Oklahoma.

Separating Value of Toll and Exchange Plant in Rate Making.

Where, in a rate case against a telephone company whose lines extend throughout the state, it is charged that the exchange rates of a single municipality are unreasonable, the corporation commission in finding a basis for the adjustment of such rate should, as far as practicable, separate the valuation of the toll plant from the value of the exchange plant and equitably apportion between them the value of the property used in common in giving both classes of service.—Pioneer Telephone & Telegraph Co. vs. State; Supreme Court of Oklahoma; 167 Pacific, 995.

Valuation Upon Which Company Is Entitled Fair Return.

What a telephone company is entitled to demand in order that it may have just compensation is a fair return upon the reasonable value of its property as a going concern, as distinguished from its physical value as a mere naked plant. This value is not obtained by adding up a number of separate items, but by taking a comprehensive view of each and all of the elements of property, tangible and intangible, including property rights, and considering them all, not as separate things, but as inseparable parts of one harmonious entity, and exercising the judgment as to the value of that entity.—Pioneer Telephone & Telegraph Co. vs. State; Supreme Court of Oklahoma; 167 Pacific, 995.

The Kentucky Workmen's Compensation Act.

Under the Kentucky workmen's compensation act (acts 1916, c. 33) Section 9, providing that whenever an injury for which compensation is payable shall have been sustained under circumstances creating in some other person than the employer a legal liability, the

injured employe may proceed both against the employer and such other person, but shall not collect from both, etc.

The collection of compensation by a telephone lineman from his employer did not estop him from recovering damages from defendant city for injuries due to its failure to insulate electric wires, the act simply preventing plaintiff from collecting from the city to the extent that he had collected from the employer.—Book vs. City of Henderson, Court of Appeals of Kentucky; 197 Southwestern, 449.

Setting Poles on Private Land Through Engineer's Mistake.

Where the supervisors ordered a survey for locating telephone poles, and the engineer made it, locating the poles, as he thought, in the highway, and they were placed as he directed, the company was not a trespasser, if, in obeying his orders, and through his honest mistake, the poles were placed on plaintiff's land.—Brammer vs. Iowa Telephone Co.; Supreme Court of Iowa; 165 Northwestern, 117.

Damages for Cutting Off Telephone Service.

In an action for damages for cutting off telephone service, it was held for the court to determine whether the question of punitive damages should go to jury. In an action for damages for cutting off telephone service, the conclusion that under the evidence as to wantonness the plaintiff could not recover any exemplary damages was held proper.—Horsfield vs. Missouri & Kansas Telephone Co.; Supreme Court of Kansas; 168 Pacific, 316.

Summary of State Commission Hearings and Rulings.

GEORGIA.

January 10: Hearing of the petition by the Southern Bell Telephone & Telegraph Co. which asks authority for the rigid enforcement of a provision of its subscribers' contract restricting the use of its telephone to the subscriber, "subscriber's agent or representative," compelling all others to use telephone pay stations.

ILLINOIS.

January 10: Hearing at Chicago in the complaint of Myer J. Stein, of Chicago, vs. the city of Chicago and the Chicago Telephone Co. as to service and rates of defendant company at Oak Park. No. 5285.

INDIANA.

January: Petition filed by the Seymour Mutual Telephone Co., of Seymour, Ind., asking for the right to surrender the existing rules governing the company and substitute in their stead a new set of rules. Only a few changes have been made from the existing regulations.

MINNESOTA.

January 10: Hearing at New Richmond in the matter of the application of the New Richmond Telephone Co. for permission to increase its local telephone exchange rates at New Richmond and Waldorf, Minn.

January 14: Hearing at Pine Island in the matter of the application of the Pine Island Telephone Co. for authority to change its local telephone exchange rates at Pine Island, Minn.

MISSOURI.

January 2: The commission authorized the sale of the Seymour Telephone Co. of Seymour, for S. A. and J. A. Killian, to L. H. Garst at a price of $3,601.

NEBRASKA.

January 2: In the application of the Fairfield (Neb.) Telephone Co. for permission to issue stock to the value of $10,000, the commission held that the company was entitled to issue $6,650 stock to repay officers for labor performed. The depreciation reserve was ordered brought up to standard and surplus funds used at earliest possible date to replace grounded wire service with metallic.

January 2: The application of the Crownover Telephone Co. for permission to issue $1,009 of stock was granted, it appearing that that sum has been expended in additions and betterments. Company ordered to set up 9 per cent for maintenance and depreciation.

January 3: The commission granted the petition of the Arlington (Neb.) Telephone Co. for permission to withdraw application to permit issuance of $6,500 stock to pay for storm damage. Company notified that order previously issued by the commission in this case, to show cause why excess dividends should not be collected from stockholders and betterments, made out of surplus be held in trust for patrons, would stand.

January 3: Application filed by the Wauneta (Neb.) Telephone Co. for permission to increase switching charges from 25 cents to 40 cents a month.

January 3: Application filed by the Lincoln Telephone & Telegraph Co. for permission to add a four-party rate of $12 a year to the one-party rate of $18 and the two-party rate of $15 at the Polk exchange to comply with conditions existing when exchange was purchased from Bradshaw Telephone Co.

January 3: Complaint filed by John J. Nichols that the Lincoln Telephone & Telegraph Co. arbitrarily deprived him of service on the York exchange.

January 3: In regard to the complaint of Mrs. J. A. Leonard against the Bassett Telephone Co. that she had been charged 30 cents for a non-subscriber's call from Bassett to Batka, whereas the rate is but 15 cents, an order to show cause was issued by the commission.

January 7: Arlington Telephone Co. ordered to show by this date cause why it should not be required to make good its depreciation fund out of dividends paid to stockholders.

January 15: Hearing of complaint of the Farmers' Independent Telephone Co., of Red Cloud, against the Lincoln Telephone & Telegraph Co.

NEW YORK.

January 7: Hearing at Albany on the complaint of Paul Judson, W. B. Van Alstyne, Gage Brothers and Giles D. Clark, of Kinderhook, and Alfred T. Ogden of Stuyvesant, Columbia county, and others, against the Valatie Telephone Co., as to service.

OHIO.

January 8: Hearings on joint application of the Fremont Home Telephone Co. and the Bell company to consolidate their Fremont properties.

PENNSYLVANIA.

December 26: Notice filed by the Claar Telephone Co. of increases in rates in Blair and Bedford counties.

December 27: The commission dismissed the complaint of Hiram E. Steinmetz, of Ephrata, against the Bell Telephone Co. of Pennsylvania, in which protest was made against new regulations which did not allow a call to be made for a particular person at a designated number.

WEST VIRGINIA.

January 25: Hearing on the application of the Littleton Telephone Co., of Littleton, Wetzel county, for authority to make a general increase in its service rates. The company asks permission to increase the rate for a privately-owned telephone in a private residence on a party line, from $8 to $11 a year; a company-owned telephone in a private residence on a private line, from $10 to $13 a year; business telephone, from $18 to $25 a year.

WISCONSIN.

January 3: Hearing on the application of the Farmers Union Telephone Co., of Cross Plains, for authority to increase rates. U-1215.

January 9: Hearing on the application of the Randon Lake (Wis.) Telephone Co. for authority to increase rates. U-1221.

January 9: Hearing on the application of the Washburn County Telephone Co. for authority to increase rates. U-1217.

January 10: Hearing on the application of the Skillett Falls Telephone Co. for authority to increase rates. U-1226.

January 11: Hearing at Iron River on the application of the Iron River Water, Light & Telephone Co. for authority to increase rates. U-1212.

January 15: Hearing on the application of the New Cashton Telephone Co. to discontinue full night service at Cashton. U-1183.

January 16: Hearing on the application of the Hubertus (Wis.) Telephone Co. for authority to increase rates. U-1228.

January 16: Hearing at Abbotsford in the case of R. E. Holden et al. vs. the Holton Farmers Telephone Co. relative to inadequate service. U-1218.

January 17: Hearing at Madison on the application of the Brodhead Telephone Co. for a readjustment of the toll rates for service between Brodhead and Monroe. Several different companies own lines between these cities and a variety of rates exists. A uniform rate is desired. The Wisconsin Telephone Co. charges 15 cents for two minutes, and the Badger company, now partially owned by the United Telephone Co., of Monroe, charges 10 cents for three minutes. There is also a separate line from Brodhead to Juda, and one from Juda to Monroe, upon which there is a rate of 10 cents. U-1231.

January 18: Hearing on the application of the Attica Mutual Telephone Co. for authority to increase rates. U-1232.

January 19: Hearing on the application of the Lodi (Wis.) Telephone Exchange for authority to increase rates. U-1233.

January 19: Further hearing on the investigation, on motion of the commission, with reference to rates, rules and practices of the Lodi (Wis.) Telephone Exchange. U-1199.

January 23: Hearing in the case of G. O. Rockstad et al. vs. the Mt. Horeb (Wis.) Independent Telephone Co., relative to rates and service. U-1222.

Fundamental Principles of the Telephone Business

A Reading Course Designed to Present Logically the Principles Which Underlie Successful Organization and Operation of Telephone Properties—Prepared Under the General Supervision of Stanley R. Edwards—This Section, "Part VI, The Valuation of Telephone Properties," Written by Chas. W. McKay

Quiz Questions on the Preceding Installment.

396. Outline the uses to which appraisals may be put aside from that of rate regulation.

397. Discuss appraisals as they relate to capitalization.

398. How does an appraisal enter into the sale or purchase of a property?

399. State another use to which appraisals are put, which has been discussed in detail.

400. Discuss appraisals of telephone properties in regard to financing.

401. What figures are used for approximately determining the value of telephone properties?

402. How may a reasonably accurate idea be obtained of the value of land used for telephone purposes?

403. What is the most prevalent approximate method of determining building values?

404. How is right-of-way value determined?

405. What is the objection to most of the approximate methods of appraising the outside plant?

406. Outline two approximate methods for determining the value of the outside plant.

CHAPTER XX. Appraisement by Short Methods (Continued).

407. *A More Accurate Method.*—All of these methods, as previously suggested, are necessarily very broad-gauged and are not susceptible to subsequent analysis. The method described in the following paragraphs, however, is a sort of happy medium between the more approximate methods and the detail method described in previous chapters.

By the employment of this method an appraisal of even a large telephone property may be effected in a remarkably short time and, while the results will not be in sufficient detail to warrant their presentation before utility commissions, nevertheless they will represent a reasonably accurate inventory of the property and will serve as a basis for the determination of a reproduction cost which will probably be nearly as accurate as a reproduction cost determined under the methods outlined in previous chapters.

This method permits the segregation of plant according to the major accounts of the accounting system prescribed by the Interstate Commerce Commission for Classes A and B telephone companies. These major accounts for the outside plant are as follows:

Exchange Pole Lines	Account 241
Exchange Aerial Cable	Account 242
Exchange Aerial Wire	Account 243
Exchange Underground Conduits	Account 244
Exchange Underground Cable	Account 245
Exchange Submarine Cable	Account 246
Toll Pole Lines	Account 251
Toll Aerial Cable	Account 252
Toll Aerial Wire	Account 253
Toll Underground Conduit	Account 254
Toll Underground Cable	Account 255
Toll Submarine Cable	Account 256

The method employed for inventorying and appraising the toll plant is identical with that employed for the exchange plant and our present discussion will, therefore, be confined to the various exchange accounts. Toll plant, where used in connection with exchange plant, may be readily identified and so designated in the field notes that it may subsequently be segregated from the exchange plant.

If plant is used for both exchange and toll service, the determination of its classification should be based upon whether it is used primarily for exchange or toll service. This point has been discussed in some detail in previous chapters, but to refresh the reader's mind, the following simple illustration is given:

A pole line carries five full arms of open wire; two arms are devoted exclusively to exchange service and two arms exclusively to toll service, while the fifth arm has four exchange circuits and one toll circuit. There will be no question as to the proper classification of the first four arms or of the wire on these arms.

Cross arms 1 and 2 are used exclusively for exchange service and, therefore, both cross arms and wire will be inventoried under the corresponding exchange accounts. Cross arms 3 and 4 are used exclusively for toll service and the arms and wire will be relegated to the proper toll accounts. Cross arm 5, however, has four exchange and one toll circuit.

The four exchange circuits will be inventoried under Account 243, "Exchange Aerial Wire," and the toll circuit under Account 253, "Toll Aerial Wire." The cross arm, however, inasmuch as it is used for exchange wire in the ratio of 4 to 1, will be classified as exchange plant. In view of this classification of cross arms, the pole line as a whole may be said to carry three exchange cross arms (per pole) and two toll cross arms (per pole). The poles, therefore, will fall under the exchange category.

		NAME	DATE	POLE AND WIRE PLANT	SHEET NO.
RECORDED BY				APPRAISAL OF INDEPENDENT TELEPHONE	EXCHANGE Baldwin
CHECKED BY				AND TELEGRAPH COMPANY	
FOOTED BY					

			POLE LINES - 241 ACCOUNT														AERIAL WIRE-243 ACCT.				
			POLES					GUYING				CROSS-ARMS				MISC.		LINE WIRE			DROP WIRE	
								ANCHOR WITH GUY		GUYS		SINGLE		DOUBLE								
STREET	FROM	TO	25' NO.	30' NO.	35' NO.	40' NO.	45' NO.	HEAVY NO.	LIGHT NO.	HEAVY NO.	LIGHT NO.	6-PIN NO.	10-PIN NO.	6-PIN NO.	10-PIN NO.	WOOD BRACKETS NO.	METAL BRACKETS NO.	NO. 12 B.W.G. IRON SPANS	NO. 10 B.W.G. COPPER SPANS	INSULATED SPANS	NO. 17 B.&S. COPPER-STEEL NO.	BARE IRON NO.
Richard St.	1	2	1	4	5	11	1	3	2	4	1	1	5	11	111	10	5	30	40	10	15	6
1st Ave.	2	3			111			1					2		1	2	1	30			3	
Richard St.	2	4																				
1st Ave.	2	5																				
Avon St.	5	6																				
Devon St.	5	7																				
1st Ave.	5	8																				
Burley St.	8	9																				
Burley St.	8	10																				
1st Ave.	8	11																				
Halsey St.	11	12																				
TOTALS																						

Fig. 6. Form for Pole and Wire Plant. Inventory.

408. *Exchange Poles and Wire.*—The inventory of the exchange poles and wire may be effected simultaneously by the use of the form presented in Fig. 6.

The exchange pole line account, it will be remembered, includes poles, cross arms, pins, brackets, anchors and guys, while the exchange aerial wire account includes line wire and drop wire. The form shown in Fig. 6 provides separate columns for entering these various items but it will be noted that the items are grouped in such a manner as to facilitate a subsequent segregation of Accounts 241 and 243.

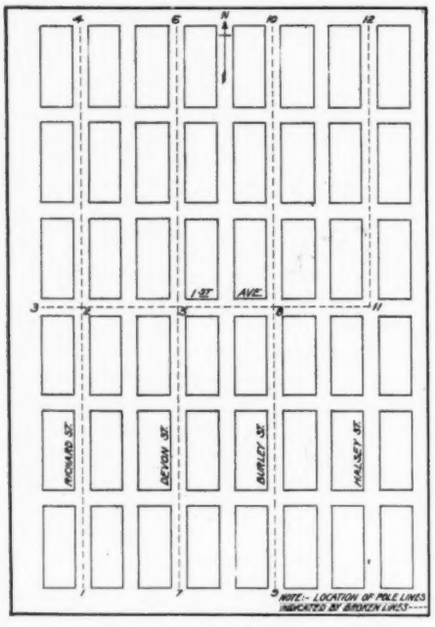


Fig. 7. Key Map for Inventory Sheet.

This form should be used in conjunction with a map. Such a map is shown in Fig. 7. Identification points may be noted on the map and also on the form. To illustrate: The appraiser will first determine a run of poles of convenient size to be recorded on one line of the form. If he is starting at point 1, he will estimate the approximate number of poles that can be recorded on the first line of the form and place the numeral 2 after the last pole.

Going rapidly over the line from 1 to 2, as he passes each pole, he will note the equipment in the proper columns. Poles will be classified according to height only; cross arms, by number of pins; guys and anchors according to average size; and aerial wire according to material and insulation.

Obviously, to make intelligent use of this form it is first necessary to make certain assumptions as to the proper classification of plant. Anchors, for instance, are divided into heavy and light anchors. Anchors having a wire guy or a very small strand guy, will be classified as light anchors, while anchors equipped with strand over a certain size—say, ¼-inch strand—will be classified as heavy anchors. In a similar manner the other major classifications of plant may be determined.

409. *Inventory of the Pole Line.*—Necessarily, an inventory made under the plan just described, will include under one classification, plant of widely varying cost. The inaccuracies incurred in this way, however, may be largely compensated in the determination of the unit costs. To illustrate: 35-ft. poles are grouped together, regardless of top diameters. The fact that there is a wide difference between the cost of a 5-in. 35-ft. and an 8-in. 35-ft. pole may be taken into account in preparing the unit cost used for appraising the inventory of 35-ft. poles.

In connection with the inventory, the appraiser should note, at least mentally, the predominating top diameters and so weight the unit cost that it will represent average conditions as found in the plant.

With a little practice and with the aid of an automobile, it is possible to inventory from 1,000 to 1,500 poles a day by using a form similar to the one presented in Fig. 6. When it is remembered that the average day's inventory, if made under the more detailed methods described in previous chapters, will rarely exceed 400 or 500 poles, the advantage of the method under consideration will be apparent.

410. *Exchange Aerial Cable.*—The method of inventorying the aerial cable plant does not differ radically from the one presented in the earlier chapters of this series. However, instead of actually measuring the cable in the field, cable lengths may be scaled from the map.

From the company's records a map should be prepared showing the location of the entire aerial cable plant, giving gauges and sizes of cables and the approximate location of terminals and of points where cables change in size. Armed with such a map, the man who makes the pole and wire inventory can check the cable plant in conjunction with pole inventory.

An experienced field man will have no difficulty in keeping track of the cable plant while he is recording the data pertaining to the poles and wire. By stopping occasionally to make a more detailed inspection, he will be able to verify the accuracy of the cable records and to note any changes upon the cable map. For instance, if the cable map shows a change in the size of a service cable as occurring in one block and the field inspector finds that the change actually takes place in the next block, it is a comparatively simple matter to make the necessary corrections on the field map, and the subsequent cable lengths as determined by scaling the map record will be reasonably accurate.

(To be continued.)

Ruling On Service Facilities

Nebraska Railway Commission Orders Fairfield Telephone Co. to Substitute Metallic Circuits for Grounded Circuit Construction on Its Rural Lines—Holds That Obligation of Utility Is to Furnish Adequate Service.

The Nebraska State Railway Commission has broken new ground in telephone regulation. It has undertaken to direct the substitution of metallic line construction for grounded circuit where the interests of the service and the condition of the company demand it.

The order was issued in the application of the Fairfield (Neb.) Telephone Co. for permission to issue stock to repay officers and directors for labor performed in the past at unremunerative wages. No protests were filed.

In its order allowing such stock issue, the commission finds that the plant is a well built and well managed one, having 370 subscribers in Fairfield and switching 47 rural telephones. The assets are $17,714, representing an investment of $40 per station. The commission holds with respect to the claim:

"The commission finds that a substantial part of the system was built by the labor of officers and directors to whom no compensation was made, and they are entitled to the discharge of this obligation by the issuance of stock. The commission is of the opinion that it would be inequitable and unfair to deny to the owners of the company all reward for their sacrifices of the past; in fact, the commission believes that it cannot do so, and is of the opinion that the company is under legal obligation to make compensation in the premises."

The commission says that the history of the company shows that it started as a co-operative company 13 years ago, that it had a precarious existence, and that its financing proved a difficult task that finally rested upon the shoulders of M. L. Jones, manager of the company. Mr. Jones is a jeweler and development was impossible only through has pledging of his own credit to borrow money. The

evidence showed that Mr. Jones put in about 16 hours a day at the jewelry business and telephone jobs and that his wife helped him six days a month. For this service and that of his wife his average compensation has been $33 a month.

The present value of the services performed by the officers in the past is found to be $10,524, and from this the commission subtracts $3,867, dividends paid to stockholders in excess of 8 per cent, leaving $6,650 as the amount of stock that shall be issued for labor and which is to be divided as mutually agreed upon.

The application asked for the fixing of the following schedule: President, $100 a year; secretary-manager, $1,200; treasurer, $75; directors, $25. The commission finds that as the company pays linemen only $68 and operators $28, these figures are excessive, and fixes these salaries: President, $50 a year; secretary-manager, $900, which shall include services of his wife for the last ten years and $600 for the first three years; treasurer, $25, and directors, $15.

The commission further found: "It appears from the record that the $2,300 heretofore set aside, and now remaining in the depreciation fund, is insufficient, and should really be 20 per cent, or $3,126. This includes nothing for obsolescence. The constant progress under way in the art of telephony must be considered in providing for depreciation; otherwise the utility will be unable to furnish its patrons modern service. The company is not doing so in the instant case. Over one-half of the rural lines are grounded circuits and nine-tenths of the residence lines in town are of the same type.

"Grounded circuits permit of considerable induction and interference with talking circuits during electrical storms, and are made unserviceable almost when paralleling transmission lines. In fact, leaks in transmission lines have been known to put grounded circuits out of use at a distance of 100 miles from the location of the leak.

"The company in the instant case has amassed a considerable surplus from its revenues in addition to maintaining its plant in good condition and paying a fair return to its stockholders. This surplus should be used in bettering the service. Metallic circuit construction should be substituted for grounded circuit construction as soon as the necessary materials and labor can be made available."

The order of the commission is that the company increase its reserve fund to $5,000, of which $3,000 shall be in the form of bank deposits or invested in such securities as may be readily realized upon. This shall take precedent over the payment of dividends, inasmuch as the obligation of a public utility is first to furnish and maintain adequate service. Because the plant is well managed, its dividends are placed at 8 per cent. The beneficial interest of the remainder shall be in the patrons of the company, the company to hold and administer all of the property in such a manner as to insure the maintenance of the service according to modern standards and to pay a reasonable return to the stockholders.

The commission also approved the application of the Crownover Telephone Co. for permission to issue $1,009 of new stock to pay for additions and betterments already made and paid for out of money credited as dividends but not paid. The commission says this constitutes a contribution to capital stock, and stock therefore should issue. The company's plant value is found to be $20,531. It is ordered to set aside 9 per cent for maintenance and depreciation.

Biographical and Personal Notes

Frank D. Lindquist, president of the Minnesota Independent Telephone Association and secretary and manager of the Fulda (Minn.) Telephone Co., was born in Carver county, Minn., March 3, 1862, and attended the district school for two terms and the Mankato normal school for one term.

During the "grasshopper" period in the '70s, he was engaged in farming in Murray county, continuing to till the soil until 1888, when he opened a general store and lumber yard at Dundee, Minn. In 1898, together with other associates, Mr. Lindquist engaged in the banking business, operating the Bank of Dundee, a private institution which was incorporated as a state bank some years later.

In 1905 Mr. Lindquist became secretary and manager of the Fulda Telephone Co., at Fulda, Minn., in which capacity he has continued ever since. The Fulda company is capitalized at $100,000, all of which stock is paid up in cash. It has grown from an exchange with but 64 subscribers to one having over 3,000.

Since the organization of the Citizens State Bank of Fulda, in 1908, Mr. Lindquist has been its president. He is also secretary of the Citizens Land, Loan & Investment Co., secretary of the Fulda Light & Power Co. and vice-president of the State Bank of Dundee.

Mr. Lindquist is a hard worker, one who takes an active interest in whatever he undertakes. He is quick to see the practical side of a proposition and may be depended upon to be fair in all his dealings, and standing out for what he believes to be right.

For a number of years he has been a member of the school board. He is a member of the Masonic and I. O. O. F. lodges.

Frank D. Lindquist.

John Hayes Smith, consulting engineer of Milwaukee, Wis., has closed his office to accept a position as assistant engineer for the Pennsylvania Public Service Commission. Mr. Smith, who is a graduate of Cornell University, associated himself with the Westinghouse Electric & Mfg. Co. shortly after graduation, remaining in that company's employ about six years.

He is best known as the first manager of the Electric Journal, Pittsburgh. Resigning this position, he became editor of the Electrical Age, New York, for four years. Since that time Mr. Smith has been in Milwaukee. For two years he was with the Milwaukee Electric Railway & Light Co., resigning as commercial engineer to take up consulting work. For the last four years he has been actively identified with much important work in Milwaukee, as well as engaged in rate and valuation work in other states.

O. Marahrens, auditor of the Home Telephone & Telegraph Co., of Fort Wayne, Ind., recently passed the state board certified public accountant's examination.

F. J. Wilson, wire chief for the Citizens Telephone Co., at Battle Creek, Mich., has been promoted to manager of the exchange. He succeeds Roy F. Mapes, who was recently made secretary-treasurer of the Michigan Independent Telephone & Traffic Association.

J. C. Lenihan, formerly of St. Paul, Minn., has leased the Burlington (N. D.) Telephone Exchange. This exchange is

located in the Lignite coal district, there being 15 large coal mines located there. Mr. Lenihan states that business looks very prosperous on this account.

Roy C. Pratt, local manager for the Nebraska Telephone Co., at McCook, Neb., for some time, has been transferred to North Platte.

Mrs. Edyth Billings, formerly manager of the telephone exchange at Fountain, Mich., has assumed charge of the United Home Telephone Co.'s exchange at Shelby, Mich.

A. O. Giere, of the auditing department of the Tri-State Telephone & Telegraph Co., at Minneapolis, Minn., has been made credit manager of that office.

George X. Cannon, who recently succeeded George H. Crandall as secretary and general manager of the Stephenson County Telephone Co., Freeport, Ill., was born in Circleville, Ohio, November 6, 1882. He began in the telephone business at the early age of 18 in the employ of the Central Union Telephone Co. at Columbus, Ohio. He worked for this company as lineman and repairman at Columbus, wire chief and chief inspector at Zanesville, manager at Nelsonville and in Perry county and district line inspector at Columbus.

Leaving the employ of the Central Union company in 1907, he became general superintendent of the Youngstown Telephone Co., at Youngstown, Ohio. He remained with that company until December, 1911, when he was appointed telephone expert for the Ohio Public Utilities Commission which had just been created.

While associated with the commission in that capacity, he organized the telephone department and made a number of important telephone investigations and valuations for the commission. Among them was a detailed traffic investigation of telephone service in Cleveland, Ohio, in the year 1913 and a detailed inventory and valuation of all the property of both the Cleveland (Bell) Telephone Co. and the Cuyahoga Telephone Co., of Cleveland, in the year 1914.

In January, 1915, Mr. Cannon resigned as telephone expert for the Ohio commission to accept a position as engineer for the Ohio State Telephone Co. He was assigned to the work of making the necessary study and plans to rehabilitate and enlarge the Toledo, Ohio, property. The engineering and supervision of rehabilitating the then two existing exchanges and the building of three new exchanges were carried on under his personal supervision. On the completion of this work Mr. Cannon resigned his position with the Ohio State Telephone Co. to accept his present position.

Mr. Cannon's advancement in the telephone field has been due to his reliability,

Geo. X. Cannon.

conservativeness, carefulness in carrying out all that he promised—and then some—and his capacity for clear thinking.

J. M. Capel, manager of the Anna (Ill.) exchange of the Murphysboro Telephone Co., resigned his position recently to engage in the electric light business at Homer, Ill.

B. M. Dunn, who for some time has been in charge of the Windom, Minn., exchange and the southwestern district of the Tri-State Telephone & Telegraph Co., for the commercial department, has assumed the management of the Faribault exchange.

John Knox, of Monroeville, Ind., has been chosen secretary and treasurer of the Home Telephone Co., at Monroeville.

B. B. Early, of Shelbyville, Ind., has been appointed manager for the United Telephone Co., at Bluffton, Ind.

D. A. McKellar, formerly connected with the plant department of the Tri-State Telephone & Telegraph Co. at St. Paul, Minn., has been given the management of the Windom, Minn., exchange and the southwestern district.

Eli Coates, manager for the United Telephone Co., at Bluffton, Ind., resigned his position recently. He expects to return to Marion to enter another line of business.

G. E. Spake has resigned his position as secretary and treasurer of the Home Telephone Co., at Monroeville. Mr. Spake has been in the service of the Home company for the last 15 years.

John E. Blegen, Minneapolis credit manager for the Tri-State Telephone & Telegraph Co., has severed his connections with the Tri-State organization and will become cashier for the Liberty State Bank, of Minneapolis.

H. N. Naylor, for five years manager of the local exchange of the Southwestern Telegraph & Telephone Co., at Waxahachie, Texas, has resigned his position to go to Frederick, Okla., as secretary of the chamber of commerce.

C. L. Miller, for seven years manager of the Madison district of the Wisconsin Telephone Co., became director of sales for the Guardian Life Insurance Co., of Madison, Wis., the first of the year. He entered the service of the Bell interests 19 years ago, after serving in the Spanish-American war. He had been in charge of the Bell exchanges at Delavan and Kenosha, Wis., before becoming district superintendent at Madison. In his new work he will have the state of Wisconsin for his territory.

A Rectifier for Telephone Use

Tungar Rectifier Developed for Telephone Purposes — Outline of Theory of Its Operation — Description of the Various Types of Tungars and Purposes for Which They May Be Utilized, with Efficiency Data.

The Tungar rectifier has been briefly mentioned in TELEPHONY at various times. It is the purpose of this article to describe a line of Tungars which have been particularly designed for use with storage batteries supplying current to private branch telephones, to electric clocks and bells, low voltage fire alarms—not over 75 volts—and for many similar requirements of low wattage at less than 75 volts.

The Tungar rectifier in all forms for these purposes consists essentially of one or two bulbs, a transformer and enclosing case.

The bulb is shown in Fig. 1, which is the 2.5 ampere size. The glass bulb contains two electrodes. The anode is the small graphite cone and the cathode is the tungsten filament, which is separately excited at about 2.5 volts.

The bulb is first exhausted to a very high vacuum at a high temperature and then filled with argon gas of high purity. When the filament is energized, the space

between the anode and cathode acts as an efficient electric valve of low resistance, allowing current to flow only in direction from anode to cathode. No reverse current is possible except at voltages very much in excess of normal.

The transformer part of the Tungar set serves three purposes: First, it adjusts the alternating current supply to that required for the direct current output. Second, it furnishes a separate source of supply for exciting the filament; and, third, it insulates the primary, A. C., from the secondary, D. C.

The enclosing case is of various designs, which are clearly shown in the illustrations on this and other pages.

None of the Tungars described in this article, with one exception, which is described separately, is suitable for charging a telephone battery when it is directly discharging on the telephone line, on account of the noise from the pulsations of the direct current. They are designed for use where a duplicate battery is installed and make a very economical set for such work. They are also entirely satisfactory for use in charging clock and bell circuit batteries while connected to the circuits as the battery absorbs the peaks of the pulsations so that they are not noticeable.

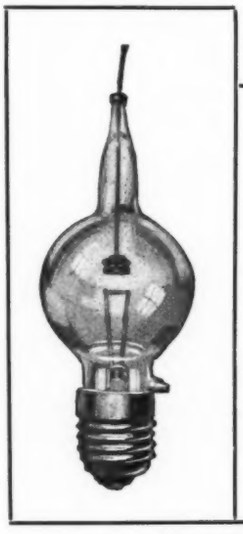


Fig. 1. Bulb of Tungar Rectifier.

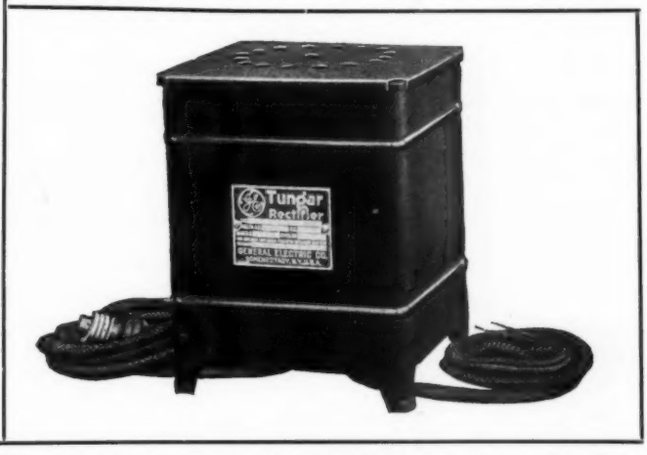


Fig. 2. The Two-Ampere Tungar Rectifier Complete.

Cat. No.	Type.	Cycles.	D. C. Volts.	D. C. Amperes.	Number Cells Will Charge.
198890	Half wave	60	7.5	2	3 cells at 2 amperes
206762	Half wave	40-50	7.5	2	6 cells at 1 ampere
206763	Half wave	25-30	7.5	2	8 cells at .75 ampere
204170	Half wave	60	24-30	1.25-2.5	11-12 cells at 1.25-2.5 amperes
206757	Half wave	40-50	24-30	1.25-2.5	11-12 cells at 1.25-2.5 amperes
206758	Half wave	25-30	24-30	1.25-2.5	11-12 cells at 1.25-2.5 amperes
199717	Half wave	60	40-50-60	1.25-2.5	13-24 cells at 1.25-2.5 amperes
206759	Half wave	40-50	40-50-60	1.25-2.5	13-24 cells at 1.25-2.5 amperes
206760	Half wave	25-30	40-50-60	1.25-2.5	13-24 cells at 1.25-2.5 amperes
198888	Half wave	60	22-30	.625-2.5	11-12 cells up to 2.5 amperes
198887	Half wave	60	22-30	.625-5	11-12 cells up to 5 amperes
198889	Full wave	60	22-30	10	11-12 cells up to 10 amperes
206761	Full wave	60	40	12	11-13 cells up to 12 amperes
206793	Full wave	60	24-30	.2-.5	11-12 cells up to .5 amperes

Details of Tungar Rectifiers of Interest to Telephone Men.

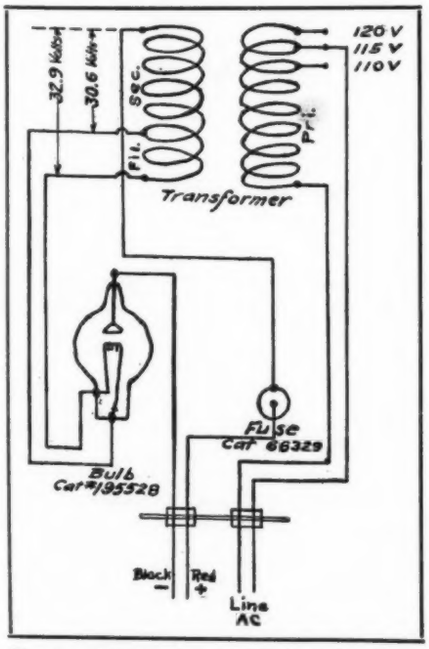


Fig. 3. Connections of Smallest Rectifier.

The accompanying list shows the present line of Tungars applying to the uses mentioned. The catalog numbers of the manufacturer are given for greater convenience in referring to them in the descriptive matter.

Fig. 2 shows the Cat. 198890 Tungar, which is the smallest and most inexpensive of the line. The dimensions are: 6 3/16 ins. wide, 8 3/16 ins. high, and 5¾ ins. deep. The complete connections are shown in Fig. 3. The Cats. 206762 and 206763 Tungars are of the same design and similarly connected, but due to the lower frequencies, and consequently larger transformer, the case is 6 3/16 ins. by 9 11/16 ins. by 7 3/16 ins., corresponding dimensions.

These Tungars were particularly designed for charging the clock and bell batteries in public schools, factories and public buildings. The simplicity of operation and installation and the very small space occupied, as well as the cleanliness of the Tungar, have made them particularly suitable in such places. There is said to be nothing about the operation of the Tungar that the most inexperienced man or woman cannot quickly master.

These smallest sets are also suitable for low voltage telephone batteries, as they are claimed to be ideal sets for charging six or eight BT cells.

The Cat. 204170 Tungar is almost identical with that shown in Fig. 2. The dimensions are 6 3/16 ins. wide, 9 11/16 ins. high and 7 3/16 ins. deep. The connections are shown in Fig. 4. The inside view of this set (Fig. 5) shows a resistance stick in the case, for adjusting the current.

The Cats. 206757 and 20758 Tungars have similar characteristics to the 60-cycle rectifier, but larger cases. This size Tungar is a very economical set for charging the 11 or 12 cells of battery used in private branch exchanges, where duplicate battery is used.

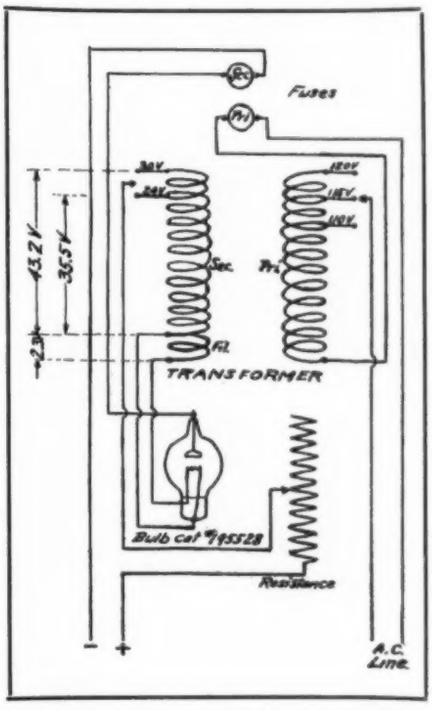


Fig. 4. Connections of Larger Rectifier.

Although the methods of regulation of this Tungar have been reduced to their simplest form, there is a wide range of regulation possible. There is a 24 and a 30-volt tap and about 6 ohms of resistance, also a considerable inherent regulation in the transformer, all of which make this Tungar very flexible. For example, it is possible to charge at 1 ampere, 40 volts on the 30-volt tap, and as

low as 28 volts, 3 amperes without using resistance.

By inserting all the resistance, one can obtain 0.5 ampere, 40 volts, and 1.25 amperes at 20 volts. By using the 24-volt tap, the following can be obtained: 1.25 amperes at 32 volts, or 2.5 amperes at 24 volts; with resistance, 0.5 ampere at 30 volts, and 1.25 amperes at 14 volts. These figures are all taken on the 60-cycle set with a line voltage of 115. A lower line voltage will reduce the output and a higher line voltage increases the output.

The efficiency of this set will be around 50 to 55 per cent, except where a considerable amount of resistance is used, in which case it drops to around 30 to 35 per cent, with all resistance in. There is very little need of using the resistance except when operating at very low currents. This efficiency is considerably higher than other sets of 75 watts output.

Cats. 199717, 206759 and 206760 are for a higher voltage output than is commonly used in telephone practice. For this reason they are merely mentioned, but they have a considerable use in connection with clock and fire alarm batteries. They are generally similar to the sets described.

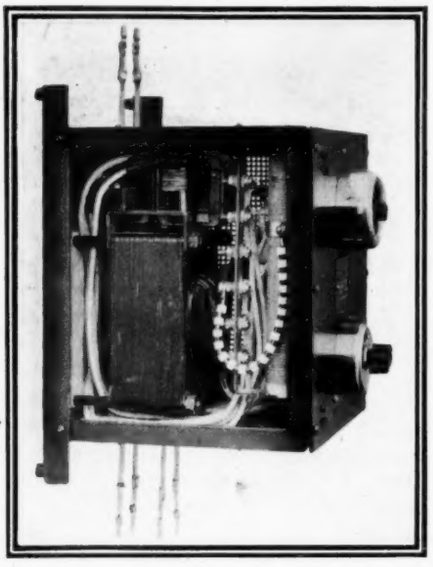


Fig. 6. Interior of Six-Ampere Tungar.

As will be noted from Fig. 8, the set is equipped with reactance and resistance regulation (see also Fig. 7) and with two switches. The T. P. S. T. switch is for opening both sides of the supply circuit and one side of the direct current circuit at one time. The D. P. D. T. switch is for putting either of the two batteries on charge as desired.

As already shown, the range of regulation on this set is very wide. The method of accomplishing this is indicated in Fig. 7. The taps on the reactance are brought out to the studs as shown. Rough regulation is obtained by connecting the flexible leads to these various studs and getting fine intermediate adjustments with the resistance, which has a sliding sleeve.

Some of the advantages of this set in telephone battery charging, as set forth by the manufacturer, are:

Its great simplicity.

Its economy in operation.

Lack of attention.

No special foundation required and no floor space, as the set should be screwed to the wall.

No oiling, meaning cleanliness.

Scarcely any noise.

The efficiency of this set with the 5-ampere bulb is about 55 per cent at full load of 5 amperes, 30 volts; with the 2.5-ampere bulb at 2.5 ampere load (really half load on the set), 30 volts, it is also about 55 per cent; and at 2.5 amperes, 30 volts, with the 5-ampere bulb the efficiency is about 50 per cent. This is very good efficiency for a 150-watt set. Even at the lowest rated load of 0.625 ampere, 27 volts (less than 17 watts), the efficiency is over 30 per cent.

Either of the Cats. 198887 or 198888 Tungars can be furnished with an am-

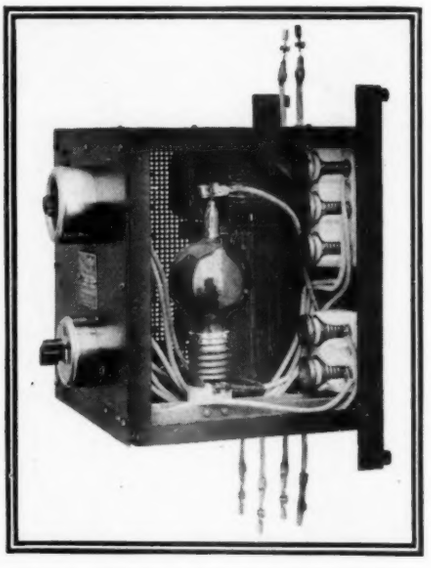


Fig. 7. Interior of Six-Ampere Tungar.

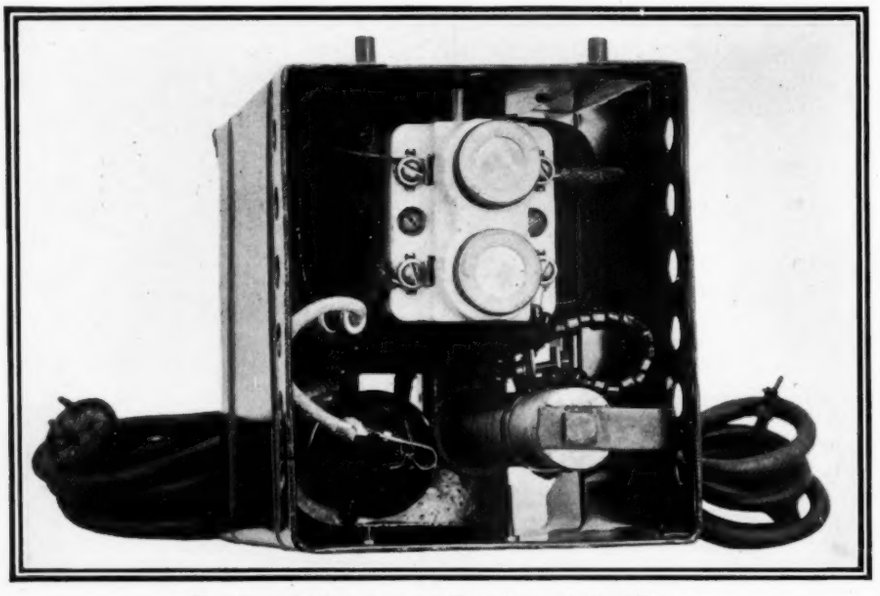


Fig. 5. Interior View of Two-Ampere Rectifier.

The Cats. 198887 and 198888 Tungars are specially designed for the telephone private branch exchange. They are identical in design and capacity as regards transformer, case and equipment. The only difference is that the Cat. 198887 Tungar is equipped with a 5-ampere bulb and the Cat. 198888 Tungar has a 2.5-ampere bulb. If only 2.5 amperes is required, it is more efficient to use the 2.5-ampere bulb. The 5-ampere set with 5-ampere bulb is entirely satisfactory for operating as low as 0.625 ampere.

This set is shown with the 6-ampere bulb in Figs. 6 and 7, and the connections in Fig. 8. The dimensions of the front panel are 10⅞ ins. by 11 ins., and the depth is 10 ins., not including instruments, which take up about 2 ins.

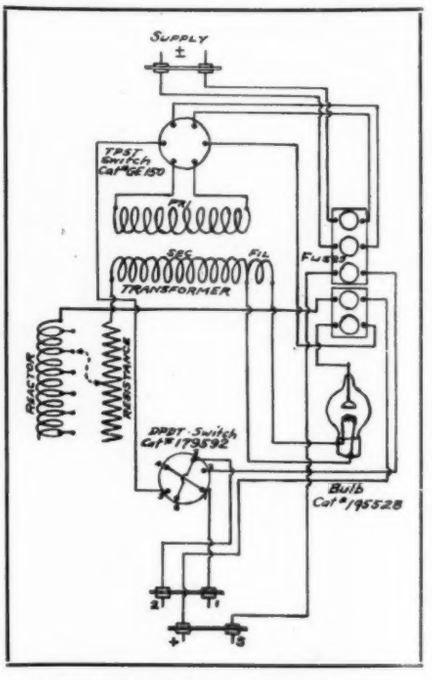
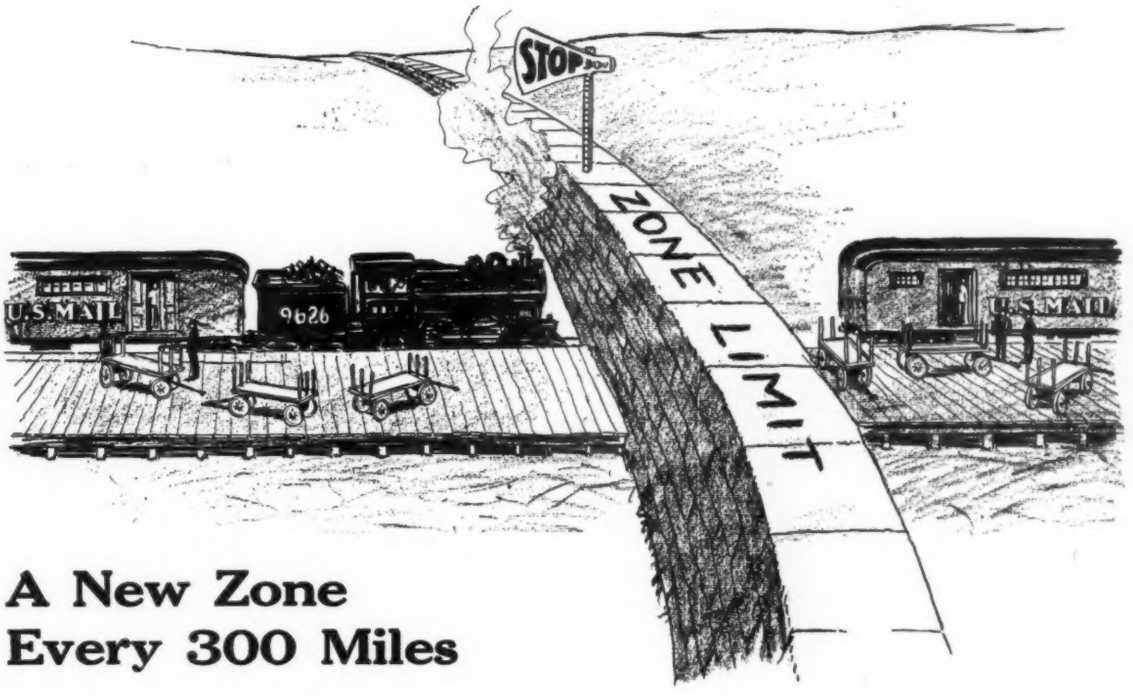


Fig. 8. Connections for Six-Ampere Tungar.

Fast Mail—



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Telephony
THE AMERICAN TELEPHONE JOURNAL

meter on special order, but they are not ordinarily supplied with instruments, as very often there is a power board having ammeter and voltmeter.

Cats. 198889 and 206761 Tungars are the full wave type for telephone battery charging. They are not quite so complete as the Cats. 198887 and 198888 Tungars, as they, being of larger capacity, usually go in a larger private exchange, where there is generally quite an elaborate power switchboard. Fig. 9 shows the general appearance of the set and how the two bulbs are installed. Cat. 296761 Tungar is very similar but larger. The general connections of both are shown in Fig. 10.

The efficiency of the 30-volt, 10-ampere set at full load is about 58 per cent; and of the 40-volt, 12-ampere set at full load, 63 per cent, and at 46 volts, 10.8 amperes, 69 per cent.

By putting a considerable amount of reactance in series between either of these rectifiers and a battery under charge and discharging on the telephone line, they

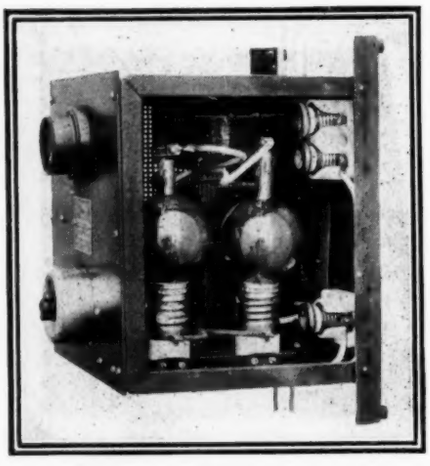

Fig. 9. General Appearance of Full Wave Tungar.

can be made fully as noiseless on the line as any rectifier or generator. These reactances have not as yet been designed, but will be if there is any demand.

The only Tungar rectifier made at the present time for operation on a battery directly connected to the line is the last one on the list, Cat. 206793. The connections of this little set are shown in Fig. 11. This is designed to operate 24 hours a day on small private branch exchanges and deliver just enough current to take care of the discharge and the losses.

The bulb used is similar to that shown

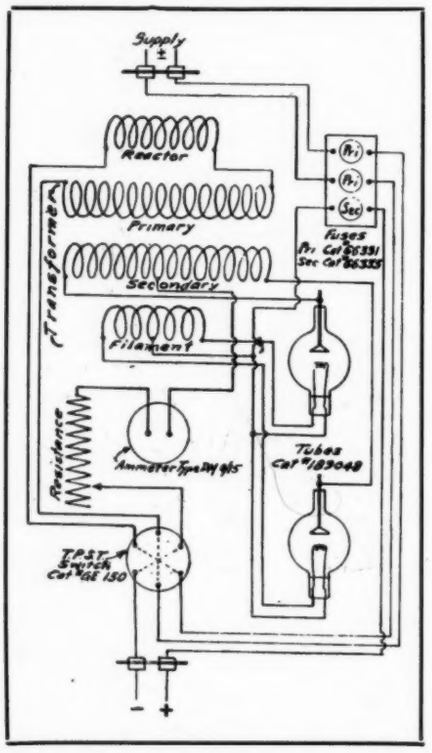

Fig. 10. General Connections of Full Wave Tungar.

in Fig. 1, except that there are two graphite anodes in place of one. The appearance of the bulb is indicated in Fig. 11. The outside dimensions of the set complete are 6 3/16 ins. by 9 11/16 ins. by 7 3/16 ins. and is similar to that shown in Fig. 3. The set has a resistance stick inside the case so that the floating current can be adjusted from 0.2 to 0.5 ampere on 11 or 12 cells.

The great demand for such a set seems to be in private exchanges some distance from the central office or where it is impracticable to charge through trunk lines from the central office.

With a continuous floating charge there is no necessity of putting any responsibility for the condition of charge of the battery on the operator of the local branch exchange, and in most cases a weekly or monthly inspection should be sufficient to insure good results from the battery. In many cases the operator of the local exchange is instructed to turn on the charging device at a certain time, and later to turn it off. In case he forgets, there may be trouble from a discharged battery.

The energy taken from the line with a 0.5-ampere, 30-volt discharge will be less than 60 watts. At a 5-cent rate this would mean a cost of about 7 cents a day for current.

The foregoing gives a fair idea of the

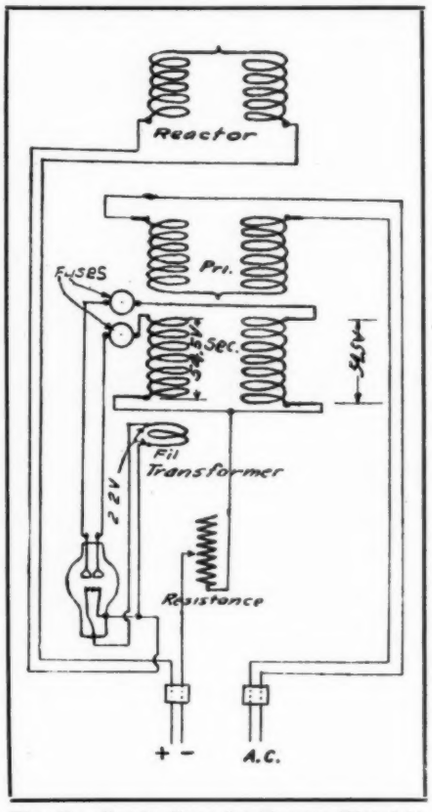

Fig. 11. Connections for Tungar Direct to Line.

Tungar for the purposes mentioned. They have been used for many other purposes.

The principle of the Tungar was discovered in the research laboratory of the General Electric Co. They have been perfected and are being sold by that company.

From Factory and Salesroom

Conventions: Western Pennsylvania, Pittsburgh, January 18-19; Minnesota, Minneapolis, January 22-24

Stromberg-Carlson Equipment to Be Installed at Red Cloud.

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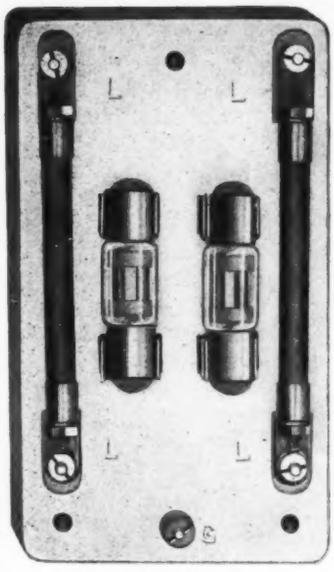
The new switchboard will be of the central energy lamp signal multiple type equipped for both local and rural service. To this end the various operators' positions will be equipped with universal cord circuits which will automatically adapt themselves to the classes of connections established. All positions of the switchboard will be equipped for harmonic party signaling.

Orders have been placed with the Stromberg-Carlson company for the necessary power, battery and terminal frame equipment for the new board, likewise



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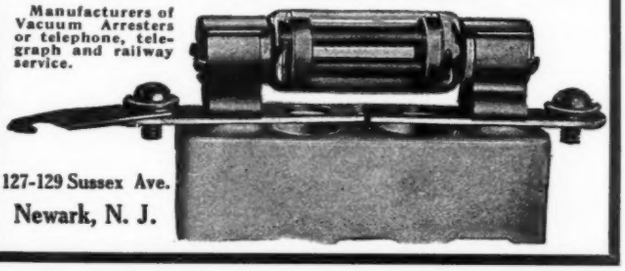

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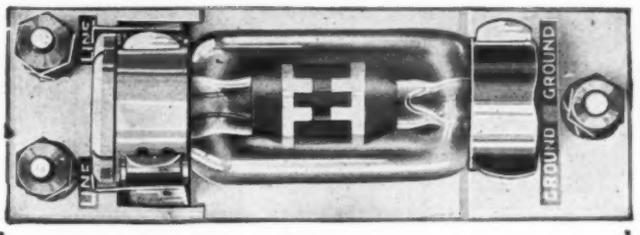

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for a large number of central energy telephone instruments for use when the cutover is made some time during the coming summer.

White Cedar Poles from the Woods to the Consumer.

The production, sale, preparation and delivery of cedar poles for telephone line construction is an industry of considerable moment—requires a great amount of invested capital, both in timber lands and equipment and a large organization of experienced and capable men.

Cedar pole production is confined to the very short winter season. After the construction of camps and the cutting of roads in the early fall, all hands must make a determined effort to cut. The cutting season is comparatively short—time must be had to trim and skid the timber to the logging roads, where it is peeled free from all bark and sawn to proper length. With the first good snow, the hauling starts and the timber landed at the railroad spur.

The telephone company, unlike the sawmill, railroad, paper mills and other consumers of forest products, cannot anticipate its yearly requirements and purchase in the spring of the year for immediate shipment from the woods' landings. Requirements will vary for assortment. Green, fresh-cut, or partly seasoned poles will shrink in size, will not last as long and are more expensive to handle than the seasoned timber.

The pole consumer wants his deliveries prompt and is deeply interested in knowing that when they arrive, he will find them uniform in size and quality—each pole suitable for the work intended. There is claimed to be only one solution to this all-important problem — the permanent concentration yard.

As the poles arrive from the woods, each pole is carefully measured, graded and sorted to pile ready for shipment. Because of the short producing season, the woodsman will most naturally commit errors, not only in the selection of the timber but also in cutting and grading. Congestions, car shortage, inclement weather, lack of labor and other causes which frequently interfere with shipments from the woods, do not affect the movement from these concentration yards.

Shipments to the trade are entirely independent of production and its inherent delays. The shipping crew is always on hand with only one goal to attain—"Satisfy the trade." When loading on orders, each pole is again measured and branded at the butt. The inspector is familiar with the high Kellog standard of quality and is frequently cautioned to remember the rule—"If in doubt about a pole, do not ship it."

Poles as well as supplies and telephone equipment are shipped promptly by the Kellogg Switchboard & Supply Co. For example, an order was received from the Minneola Telephone Co., of Minneola, Kans., dated October 25, 1917, calling for a carload of poles, ranging in size from 4-in., 20-ft., to 8-in., 40-ft., all to receive the hot preservative treatment.

The entire lot was shipped from Minneapolis October 31, 1917, and arrived at Minneola November 20, 1917—25 days from the date of the order to the delivery of the poles.

The Kellogg Switchboard & Supply Co. is doing its utmost to get all goods at their destination as promptly as possible under present conditions.

Paragraphs.

GARNETT YOUNG & Co. have succeeded to the business of the Telephone-Electric Equipment Co., which will be conducted without interruption at San Francisco and Los Angeles, Cal., Seattle, Wash., and Portland, Ore. This company is the exclusive Pacific Coast sales agent for the American Electrical Works, Holtzer-Cabot Electric Co., Simplex Wire & Cable Co. and the Stromberg-Carlson Telephone Mfg. Co.

THE REBUILT TELEPHONE EQUIPMENT Co. has moved from 2157 W. 21st street to larger quarters at 5235-5237 Ravenswood avenue, Chicago, where it is in better position to serve its patrons.

THE ELECTRIC STORAGE BATTERY Co., of Philadelphia, Pa., has issued a new catalog and price list, section AB, which lists, describes and illustrates the various types of chloride accumulator and Tudor accumulator batteries, parts and accessories.

Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and Incorporations.

OKEECHOBEE, FLA.—Articles of incorporation have been filed with the secretary of state by the Okeechobee Telephone Co. with $15,000 capital stock. R. E. McLaughlin is president and B. M. McLaughlin, secretary-treasurer.

MODOC, ILL.—The Modoc & Marigold Telephone Exchange has been incorporated with $940 capital stock by Albert T. Hofman, A. J. Pautler and John A. Mudd.

STANFORD, IND.—Articles of incorporation have been filed by the Stanford Telephone Co. with $550 capital stock. The incorporators are Robert S. Whaley, Charles Hudson, Thomas Phillips, Henry A. Brown, Stanley Whaley, and others.

DELTON, MICH.—Articles of incorporation have been filed by the Delton Telephone Co. with $2,400 capital stock. The incorporators are William Mason, president, Chas. Kahler and A. W. Collison, all of Delton.

PRAIRIEVILLE, MICH.—The Prairieville Telephone Co. has been organized with $8,000 capital stock. The incorporators are Fred O. Hughes, of Delton; W. L. Thorpe, of Cressey, and S. R. Rogers, of Doster, Mich.

ALDEN, MINN.—The Alden Telephone Co. has been incorporated with $25,000 capital stock by J. A. Hazle, Alden, president; B. C. Hazle, Alden, secretary-treasurer; D. W. Gretorex, Blue Earth, vice-president; A. R. Hazle and H. H. Hazle, Alden.

FERGUS FALLS, MINN.—Articles of incorporation of the Henning-Ottertail Cooperative Telephone Co. was filed recently in the register of deeds office. The company has a capitalization of $2,000 and its officers are: Henry Barthles, president; Dick Bolland, vice-president, and George H. Miller, secretary and treasurer.

BOZEMAN, MONT.—The Bozeman-Norris Telephone Co. has filed articles of incorporation with $40,000 capital stock. The company will operate a telephone line from Bozeman to Norris and a number of other points. The incorporators are Horace A. Cleaveland, J. T. Eastlick and C. W. Hudson, of Norris; Daniel P. Inabnit, Bozeman, and E. McDonnell, Manhattan.

FORBES, N. D.—The Forbes Valley Telephone Co. has been chartered by the secretary of state to build a telephone line 15 miles northwest from Forbes, with eight miles of branch lines, to cost $1,800. W. H. Haas, Michael Halloch and A. S. Marshall are the incorporators.

MEDFORD, OKLA. — The Medford & Northeastern Telephone Co. has filed articles of incorporation with $1,000 capital stock. The incorporators are O. V. Williams, E. G. Costner and J. F. O'Connor, all of Medford.

BONESTEEL, S. D.—Articles of incorporation have been filed by the Dry Creek Mutual Telephone Co. with $5,000 capital stock. The incorporators are Ed Tarr, Clyde Pepper and George Ott, of Fairfax, S. D.

CLEARFIELD, S. D. — The Clearfield Farmers' Telephone Co. has been incorporated with $2,500 capital stock by E. C. Kunde, W. F. Schultz and G. E. Bradford, all of Clearfield.

DELL RAPIDS, S. D.—The Dell Rapids & Baltic Telephone Co. has been incorporated with $5,000 capital stock by O. C. Lyng and Andrew Anderson, of Dell Rapids, and A. F. Bakken, of Baltic, S. D.

WINNER, S. D.—The Ideal Mutual Telephone Co. was recently organized

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with the following officers: W. W. Lenker, president; L. F. Heller, vice-president; C. H. Flint, secretary; A. C. Ivers, treasurer. Nels Anderson, W. C. Balfany and Frank Frank were elected directors.

JEFFERSON, VA.—Articles of incorporation have been filed by the Ashe Telephone Co. with $25,000 capital stock.

CLAY, W. VA.—The Clay Citizens' Telephone Co. has been incorporated with $5,000 capital stock to operate a telephone system in Clay county. The incorporators are W. S. Pierson, B. C Eakel, P. M. Summers, R. A. Hamrick and S. W. Bryant, all of Clay.

DODGEVILLE, WIS.—The New Union Telephone Co. has filed articles of incorporation with the secretary of state with a capital stock of $30,000. The incorporators include E. L. Harman. Mrs. Maude L. Harman, A. S. Bishop and Darius Harman.

MUSCODA, WIS.—The Muscoda Telephone Co. has been incorporated with a capital stock of $10,000. Among the incorporators are A. W. James, Elizabeth James and J. M. Kaiser.

Financial.

OWENSBORO, KY. — The Owensboro Home Telephone & Telegraph Co. has increased its capital stock from $10,000 to $100,000.

GALESBURG, ILL.—The Galesburg Union Telephone Co. has increased its capital stock from $250,000 to $500,000.

CAMBRIDGE, OHIO. — The Cambridge Home Telephone Co. has increased its capital stock from $75,000 to $100,000.

CIRCLEVILLE, OHIO.—The Citizens' Telephone Co. has increased its capital stock from $200,000 to $234,000.

LIMA, OHIO.—The Lima Telephone & Telegraph Co. has increased its capital stock from $800,000 to $1,000,000.

FOUNTAIN INN, S. C.—The Fountain Inn Telephone Co. recently increased its capital stock from $2,500 to $8,000.

Elections.

COLUMBIA, IND.—At the annual meeting of the Whitley County Telephone Co. the old officers and directors were re-elected. The board of directors includes F. F. Morsches, Mrs. Mary S. Magley, James D. Adams, S. J. Peabody, John C. Myers, Robert A. Adams, A. H. Krieg, J. P. Raupfer and W. F. McNagny. James D. Adams is president; F. F. Morsches, vice-president, and Mrs. Mary S. Magley, secretary-treasurer.

RED WING, MINN.—The Red Wing Telephone Co. held its annual meeting recently and elected the following officers and directors: D. M. Neill, president; C. A. Rasmussen, vice-president; N. H. Featherstone, treasurer; H. E. Akenson, A. G. Scherf, E. H. Moulton, G. W. Stumpf, W. C. Krise and E. P. Hall, directors.

MONROE CITY, MO.—At the annual meeting of the Farmers' & Merchants' Telephone Co. the following directors were elected for the ensuing year: Wm. Hamilton, W. H. Elliott, L. O. Wilson, T. A. Wilson, Jackson W. Rouse, Dr. J. H. Bell, J. A. Yates, W. A. Shuck, John Cleary, W. M. Patterson and H. J. Riley. At a subsequent meeting of the directors, the following officers were elected: L. O Wilson, president; Dr. J. H. Bell, vice-president; W. M. Patterson, secretary; H. J. Riley, manager.

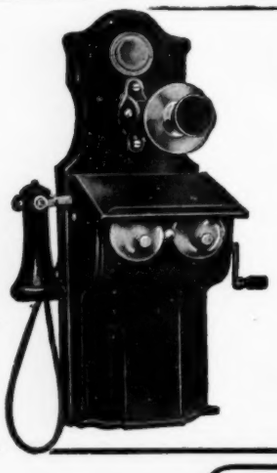
BLUE SPRINGS, NEB.—The Gage County Independent Telephone Co. has elected officers as follows for the ensuing year: President, J. H. McPherson; treasurer, F. C. Patton; secretary and manager, S. F. Roderick, and auditor, Virgil Trump.

NORTH BEND, NEB.—The Farmers' Telephone Co. recently elected the following officers for the ensuing year: Fred Howe, president; John Drenguis, vice-president; Thomas H. Fowler, secretary, and C. L. Kelly, treasurer.

RED CLOUD, NEB.—The Farmers' Independent Telephone Co. held its annual meeting recently and elected the following officers and directors for the ensuing year: O. E. Ramey, president; O. C. Teel, secretary; Clark Stevens, treasurer and manager; J. H. Ellinger and Geo. Beardslee, directors.

LEBANON, OHIO.—At the annual meeting of the Valley Telephone Co., held recently, the following directors were re-elected unanimously: G. Lowe, John A. Thompson, August Ast, Victor Worley, Jacob Shumaker, Ed. Rogers and W. Gilbert Thompson. The board organized by the election of G. Lowe, president; August Ast, vice-president; W. Gilbert Thompson, secretary-treasurer and general manager. The financial report showed the company to be in good condition and the largest business year in its history, its gross receipts totaling over $42,500.

BRANDON, WIS.—At the annual meeting of the Brandon Telephone Co., the officers and directors were elected for the ensuing year as follows: President, H. L Brown; vice-president, F. S. G. Henske; secretary and treasurer, F. Schwandt; directors, Frank Shaykett, Edward H. Sherwin, F. Schwandt, F. G. Henske and H. L. Brown.



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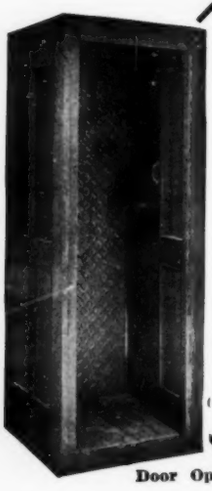
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